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ABSTRACT

This volume contains two appendixes to volume 1 of a study on new designs for the comprehensive high school The appendixes consist respectively of the meeting agendas and the working papers of the Design Group for the project. The 12 working papers each focus on one aspect of the proposed new design. Titles and authors are as follows: "Learner Outcomes: Past, Present, and Future" (Kathryn Pearce et al.); "Learner Outcomes: Design Specifications and Selected Learner Outcomes for the Comprehensive High School of the Future--Choosing the Keystone" (Virginia Pease et al.); "Learning Process: Interaction of Curriculum, Instruction, and Assessment in New Designs for the Comprehensive High School" (Kathryn Pearce et al.); "Learning Organization: Reorganizing Learners, Learning Process, Settings, Time, and Staff in the Comprehensive High School" (Kathryn Pearce et al.); "Learning Decision Making: Specifications to Guide Processes in Future Comprehensive High Schools" (Virginia Pease, George Copa); "Learning Partnerships: Lessons from Research Literature and Current Practice in Secondary Education" (Doris Karls et al.); "Learning Staff: Conditions, Guidelines, and Desired Characteristics in New Designs for the Comprehensive High School" (B. Jeannie Lum et al.); "Learning Technology: Enhancing Learning in New Designs for the Comprehensive High School" (Mike Damyanovich et al.); "Learning Environment: An Architectural Interpretation of a New Designs Archetype High School" (Bruce Jilk et al.); "Learning Costs: Operating Cost Analysis for New Designs for the Comprehensive High School" (James Rickabaugh et al.); "The Comprehensive High School: An Historical Perspective" (George Copa, Virginia Pease); and "The Comprehensive High School: An International Perspective" (Theresa Donohue et al.). (YLB)

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University of California, Berkeley

NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL
VOLUME II—WORKING PAPERS

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NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

VOLUME II—WORKING PAPERS

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APPENDIX A
Design Group Meeting Agendas

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Design Group Meeting Agendas

Meeting #1 Agenda

Sunday, July 7, 1991

7:00 PM Arrive at University of Minnesota and informal gathering at Radisson University Hotel. As a way to get acquainted with each other and with the project, we will begin by discussing three questions:

Q1: Why this project and this Design Group?

Q2: What is the nature of your own work right now?

Q3: What role could the Design Group play in the project?

Monday, July 8, 1991

7:45 AM Get picked up at the front door of the Radisson Hotel

8:00 AM Arrive at Vocational and Technical Education Building; coffee & rolls

8:15 AM Welcome by Charles Hopkins, Site Director, NCRVE University of Minnesota Site

8:30 AM Morning discussion

Q4: What symbol, signature, or student would uniquely characterize your image or vision of the new high school?

Q5: What should be the learner outcomes for this school?

-History of learner outcomes
-Context for learner outcomes (about the year 2000)
-Share potential outcomes

11:30 AM Lunch break at the St. Paul Student Center

12:30 PM Afternoon session

Q5: What should be the learner outcomes for this school? continued

-Issues, questions, and concerns raised by outcomes
-Key aspects of the process of selecting outcomes

4:30 PM Adjourn

Tuesday, July 9, 1991

7:45 AM	Get picked up at the front door of the Radisson Hotel
8:00 AM	Arrive at the Vocational and Technical Building; coffee and rolls
8:15 AM	Morning session
Q6:	**What should questions #5 have been?**
Q7:	**How should we approach the learning process (curriculum, instruction, and assessment) question?**
11:30 AM	Lunch break
	Issues and questions continued
2:30 PM	Adjournment

Meeting #2 Agenda

Monday, October 7, 1991

8:00 AM	Catch van to Xerox Headquarters from Radisson Hotel
8:30 AM	Welcome and introduce new members and guests
	Welcome by Xerox
9:30 AM	Morning discussion
Q1:	**Do we have consensus on learner outcomes for now?**
	-Discussion of working paper #2 ("keystone" paper)
	-Thoughts, caveats, improvements
Q2:	**What should we know about the market for new designs for the comprehensive high school? Who is the customer?**
	-Is the New American Schools Development Corporation (NASDC) design competition an immediate market for our ideas?
	-Others?
Q3:	**What learning processes will facilitate the learner outcomes in the comprehensive high school of the future?**
	-Discussion of working paper #3 ("Learning Processes")
	-What curriculum should be adopted?
	-How should instruction fit into our vision?
	-What purpose should assessment serve? How?
11:30 AM	Lunch break

12:30 PM Afternoon discussion

Q4: How can we develop good designs for learning processes?

-Issues, questions, and concerns raised by learning processes
-Design specifications for learning processes
-Testing out our ideas

Q5: What did we hear students and educators from Rochester MN say about comprehensive high school design?

-Preliminary findings
-Issues raised and clarified

4:30 PM Adjourn

Tuesday, October 8, 1991

8:00 AM Check out of hotel; van to Xerox

8:30 AM Morning discussion

Q5: How is the fit between the symbols of our vision from meeting #1 and our current ideas?

Q6: What should we do about some unresolved issues from the first meeting?

-What is the problem we are trying to resolve?
-What is the meaning of comprehensive?
-Who is the customer?
-Are we dealing with political reality?

10:30 AM Break for brunch

11:15 AM Discussion continued

Q7: How should we approach phase #3 school organization and partnerships?

-Share interesting items and ideas
-Identify concepts, people, and places to investigate

1:00 PM Adjournment: break for lunch or the airport

Meeting #3 Agenda

Friday, December 13, 1991

9:00 AM Meet at United Federation of Teachers Building
leave from UFT for Aviation High School site

1:00 PM Lunch

1:30 PM Afternoon discussion

Q1: What did you hear teachers say about the desired features of school organization, management, and partnerships for the comprehensive high school of the future?

Q2: What did we accomplish at meeting #2 in Los Angeles?
-Review of meeting summary
-Issues, concerns, or observations

Q3: What do we need to accomplish at meeting #3 in New York?
-Overview of the agenda
-Suggestions for changes

Q4: What should we do about organization of students in new designs for the comprehensive high school?
-Discussion of working paper #4: section on "organization of student"
-Issues, questions, concerns about student organization
-Design specifications for student organization of the comprehensive high school

Q5: What should we do about organization of curriculum in new designs for the comprehensive high school?
-Continued discussion of working paper #4: section on "organization of curriculum"
-Issues, questions, concerns about curriculum organization
-Design specifications for organization of the comprehensive high school

Saturday, December 14, 1991

9:00 AM Meet at UFT Building; breakfast provided

9:15 AM Thinking ahead to 1992

-Plan 1992 meeting dates and locations:

- Atlanta March 5-6? March 16-17?
- Fort Collins, CO? Dates?
- Early fall meeting? Back in Minnesota?

9:00 AM Morning discussion

Q6: Preview: How should we think about meeting and exceeding expectations for world class standards in comprehensive high schools?

-Short briefing from upcoming paper on "Implications for New Designs from International Education"

-Issues, ideas, questions, comments to be addressed

-Will the notion of "benchmarks" work here?

Q7: What should we do about partnerships outside the school to enhance outcomes and learning in new designs for the comprehensive high school?

-Discussion of working paper #5: Partnerships for comprehensive high schools

12:30 PM Lunch provided by the UFT

1:00 PM Afternoon discussion

Q7: Continued discussion on partnerships

-Issues, questions, concerns

-Design specifications for partnerships

Q8: How should we approach phase #4: desired staffing and professional development?

-How could we staff the comprehensive high school of the future?

-How would we provide professional development for new or existing staff of the comprehensive high school of the future?

-Share interesting ideas and items

-Identify people, concepts, places to investigate

Q9: Do we have any thoughts on continuing themes from our discussions?

-Focusing the problem

-Synthesizing the visions

-National/state political agendas

4:00 PM Adjournment

Meeting #4 Agenda

Friday, March 6, 1992

8:30 AM Catch Wyndham shuttle to Southern Regional Education Board

9:00 AM Welcome by SREB; coffee and rolls

9:15 AM Morning discussion

Q1: What did we accomplish at meeting #3 in New York?

-Review of meeting summary

-Revised working papers on organization and partnerships

-Issues, concerns, or observations

Q2: What do we hope to accomplish at meeting #4 in Atlanta?

-Brief summary of March 5th focus groups in Atlanta

-Overview of the meeting #4 agenda .

-Suggestions for change

Q3: What learning organization and partnership design specifications will deliver the desired learner outcomes and learning processes?

-Second look at design specifications for organizing learners, learning process, learning setting, learning staff, and learning time?

-Second look at design specifications for partnerships with the community, family, and employers.

12:00 Lunch at SREB

12:45 PM Afternoon discussion

Q4: What should be the characteristics of staff and staff development in this new high school designs?

-Introduction of Jeannie Lum, Asst. Professor, UM

-Draft version of working paper on staffing

-Discussion of staffing and staff development qualifications, issues, recommendations

-What design specifications for staffing and staff development could be proposed at this point?

4:00 PM Adjourn

Saturday, March 7, 1992

8:30 AM Meet in the Bennett Room, Wyndham Midtown

-Continental breakfast

9:00 AM Morning discussion

-Set dates, places for next meetings

Detroit, June __________

St. Paul, September ___________

Q5: What can we learn about "New Designs . . ." by looking at the designs for secondary education in countries which are economically competitive with the United States?

-Introduction of Theresa Donahue, Research Assistant

-Discussion of working paper "Implications . . ."

-Issues, questions, additional ideas

-Implications for our design specifications

Q6: Are we designing something "new" or are we re-creating the past?

-What have we decided in 1991 about "New Designs for the Comprehensive High School"?

-Second look at the design-down process

-Inconsistencies in our design specifications

-Thoughts, new directions, mid-course corrections for 1992

12:00 Lunch in Doggett Room, Wyndham Hotel

12:45 PM Afternoon discussion

Q7: How can we best disseminate the products and information from this research project?

-Dissemination plan prepared by Joann Hanson-Stone, PhD.

-Ideas about places, people, and meetings coming up in Oct.-Dec., 1992 and 1993.

Q8: What are our best ideas about how to approach the last phases of this project?

-facilities, equipment, and supplies

-cost of new designs

-other working papers that are needed

3:00 PM Adjourn

Meeting #5 Agenda

Sunday, June 28, 1992

6:30 PM Evening discussion of Phase 6 of "New Designs...." Opening session at Hyatt Hotel, Union Station, St. Louis

Q1: What did we accomplish at meeting #4 in Atlanta?

-Review of meeting summary

-Update on working papers on staffing and staff development, international secondary education implications, dissemination plan, and the comprehensive high school: an historical perspective

-Issues, concerns, or observations

Q2: What do we hope to accomplish at meeting #5 in St. Louis?

-Review of the agenda

-Suggestions for change

-Reaction to Jerry's paper

Q3: What research activities have taken place since the Atlanta meeting?

-Brief summary of May 12th focus groups in Detroit

-Commissioning working papers on educational technology and learning environment

-Progress on dissemination plan

-Summary of June 1-2nd meeting with NCRVE researchers in St. Paul

-Interim report

-Other

-Update on the 1993 NCRVE proposal

9:30 PM Adjourn

Monday, June 29, 1992

8:30 AM Morning session at the Hyatt Hotel

Q5: How can educational technology help us support and catalyze the design specifications for "New Designs for the Comprehensive High School"? Mike Damyanovich, Educational Technology consultant

-meaning of educational technology

-designing down to educational technology

-smart questions about educational technology

-design specifications, preliminary

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10:15 AM Break

Q6: How would the proposed design specifications be represented architecturally? Bruce Jilk, AIA, CEFPI

-the learning environment

-representing the concepts

-introduction to space program

-synthesis of facility ideas

12:00 Lunch on your own in the Union Station

1:00 PM Afternoon discussion

Continue morning discussion about educational technology and facilities

Q7: What are the implications of the proposed design specifications on the decision-making in the new high school designs?

-what can be organized

-who should organize the decisions?

-possible ways to organize

4:30 PM Adjourn

Tuesday, June 30, 1992

8:30 AM Closing session at Hyatt Hotel

Q8: Do the signature and learner outcomes say what we intend about this new school?

-Second look at draft of design specifications for the school, including preliminary specifications for staffing and staff development, organizing the decision-making, educational technology, and facilities.

-Coming to closure on the signature?

-Revisiting learner outcomes

Q9: How should we proceed on the final report?

Planning the final meeting

12:00 Adjourn

Meeting #6 Agenda

Friday, August 28, 1992

6:30 PM Opening session at George and Pat Copa's home, Dinner and informal discussion about the final phases of the project. Architectural drawings on display.

Saturday, August 29, 1992

7:45 AM Catch Hilton van to Room R390 Vocational and Technical Education Building, University of Minnesota St. Paul Campus.
Continental breakfast provided.

8:00 AM Morning discussion

Q1: **What do we hope to accomplish at meeting #6 in St. Paul**?
-Review of the agenda
-Suggestions for change
-Reaction to materials from meeting #5.

Q2: **How can our design specifications be interpreted architecturally**?
-Bruce Jilk's presentation of his interpretation
-Discussion and questions about the prototype high school

Q3: **How can our signature be represented graphically**?
-The process of graphic representation
-Discussion of the signature
-Thoughts for future school design teams

10:00 AM Break

Q4: **How can we think about the cost of educating students in a New Designs environment**? Jim Rickabaugh, Superintendent and Carter Christie, Business Manager at School District of Burnsville, Burnsville, Minnesota
-Approaching the problem of conceptual costing
-What do we mean by "typical cost"
-Costs under different scenarios
-Reactions to the cost issues

12:00 Working lunch; box lunch provided

12:30 PM Afternoon discussion

Continue morning discussion about cost and facilities

Q5: How can we best communicate our ideas about the New Designs project?

-Discussion of final report draft (i.e., tone, boldness, gaps, balance, inconsistencies, ...)

-Implications for other dissemination plans (i.e. reports, presentations, ...)

3:15 PM Reflections

4:00 PM Adjourn

APPENDIX B

Learner Outcomes: Past, Present, and Future

LEARNER OUTCOMES: PAST, PRESENT, AND FUTURE

by

Kathryn Pearce
Robert H. Beck
George H. Copa
Virginia H. Pease

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LEARNER OUTCOMES: PAST, PRESENT, AND FUTURE

This report, prepared in three parts, gives students, parents, educators, legislators, business people, and the citizenship in general, an opportunity to gain insight into the role of education as defined by the aims, goals, objectives, and outcomes identified by educators and educational researchers in and out of the educational community.

Throughout the literature, terms like *aims, goals, objectives, requirements,* and *outcomes have* been used without clearly defining their meanings. The first part of this report provides definitions for those terms, and it allows the reader to develop a feeling for how those terms are used in the literature.

An examination of the work of educational researchers supplies an extensive inventory of past and current educational aims, goals, objectives, requirements, and outcomes. The second part of this report contains a discussion of that inventory. The third part of this report provides some direction for students, parents, educators, legislators, business people, and citizens as they struggle to identify the outcomes of education in their schools or communities.

Defining Aims, Goals, Objectives, Requirements, and Outcomes

Historically, words such as aims, *goals, objectives, requirements,* and *outcomes* have been used to define the role of education either from an input or outcome perspective or as a means-end process. Terms using an input perspective, such as *requirements*, define what the student should be taught. Terms using an outcome perspective, such as *outcomes* and *objectives,* require demonstration by students, and terms using a means-end process such as *aims* and *goals,* point the way, which, in some cases, may never be reached. Sometimes authors and researchers use a specific word or phrase to identify a single concept, as Spady (1989) does in his literature on *exit outcomes of significance* (p. 16); sometimes the terms are used interchangeably, almost generically, without any uniqueness. This report will introduce a variety of uses for terms, and in defining those terms, this section also will analyze the impact of those terms on the purveyors of education. The definitions and analysis will be gleaned from materials prepared by Dewey

(1916), Walker and Soltis (1986), Sizer (1984), Goodlad (1984), Boyer (1983), Mager (1970), and Spady (1989).

John Dewey, (1916), thoroughly discussed the term *aim* as he believed it should apply to education. He said, "Our first question is to define the nature of an aim so far as it falls within an activity, instead of being furnished without" (p. 101). He then carefully demonstrated the connection between *aims* and *ends* as he contrasted them with *results*. According to Dewey, results arise from a state of affairs but are not necessarily the desired state. An *end* requires a *beginning* and an intervention that is a "process of transformation and realization" (p. 101). Dewey defines *ends* as true "terminations or completions of what has proceeded" (p. 101) and believes *aims* implies an orderly and ordered activity leading to a foreseen end. Dewey, in fact, established several criteria for good aims including: (a) they "must be an outgrowth of existing conditions" (p. 104), (b) they set a mark in advance that directs the activity, and (c) they are a means of directing the activity. Dewey recognized that an aim must be flexible and is, in fact, "experiential, and, hence, constantly growing as it is tested in action" (p. 105).

Years later, Walker and Soltis (1986), apparently influenced by Dewey's explanation, prepared their own definition for the term *educational aims*. They defined *educational aims* as "desirable states for individuals and societies that seem approachable or achievable through education" (p. 2). They stated that aims which guide and motivate educators may be remote and intangible or immediate and accessible. Aims, as discussed by Walker and Soltis, are not necessarily fully attainable. They do, however, according to the authors, "serve as inspirational visions of the Good and stress the role of education in the human quest of the *Good Life*" (p. 4).

In contrast to aims, which may simply point the way, other authors believe *achievable* goals for education must be identified. One such author, Robert Mager (1962), apparently influenced by behaviorist psychology, thought schools should identify specific, achievable goals and objectives for the students. Mager's *instructional objectives*, which show cause-effect relationships, are an example of achievable goals. "The student will demonstrate" is the recommended introductory phrase for each objective. The writer of the objective must explain *what* students will achieve and *how* they will demonstrate that achievement.

Spady's learner outcomes followed the same pattern as Mager's instructional objectives, and the term *learner outcome* may, in fact, be used somewhat interchangeably with *instructional objective*. Even though outcomes and objectives may be similar, Spady reminds us that outcome based education is more than instructional objectives. He defines it as a "comprehensive transformation approach" (p. 16) to education. However, like Mager, Spady believes the outcomes must be observable and measurable; students must demonstrate performance. The difference lies in the degree of specificity mandated by the outcome. Spady's exit outcomes are much broader than Mager's instructional objectives. Mager and Spady both believe it is extremely important that these objectives or outcomes be shared with students and that they guide the educational process.

Currently educational psychologists who are doing research in the cognitive science area identify the search for goals, aims, objectives, requirements, and outcomes as an ill-structured problem—one which does not have a single correct solution. In well-structured problems there are *correct* solutions. The *givens* of the problem are known and the constraints on solutions are also known. In ill-structured problems, both the problem representation and the solution are areas of potential disagreement. According to the following quote from Glover, Ronning & Bruning (1990), even historical interpretation of educational goals is an ill-structured problem:

> Recently, for example, a number of *revisionist* educational historians have attacked the widely held view that the American educational system was developed in the hope that an educated populace could more effectively govern itself. Some historians now argue, for instance, that the educational system was established to provide well-trained and docile workers for the American free-enterprise system. Surprisingly to some, perhaps, considerable documentation can be found to support both problem representations. (p. 361)

In addition to providing the above discussion about ill-structured problems, cognitive psychology has also provided research on expert/novice decision-making efforts involving ill-structured problems. This research leads to the belief that in education, as in other professional areas, those who have acquired a great deal of experience, (i.e., expertise) in a field would be the ones who could most readily identify the *best* answers (Glover, Ronning & Bruning). In this case, the best answer might be clear and unambiguous identification of aims and goals for education. However, as frequently happens when experts attempt to address an ill-defined problem, there is considerable difference of opinion. Even so, the expert/novice research has shown that expert opinion considers more variables and results in more complex and complete decisions. This document shares educational goals identified by experts. These experts do not always agree. However, the list of goals they collectively have developed may help school districts make decisions as to the goals they wish to identify for their districts.

Although schools have identified many aims and/or objectives of education, these aims/objectives are frequently not followed by the teachers and principals. For an explanation of this phenomena, Sizer's comments on the rationale or goals of education in his book *Horace's Compromise* should be reviewed. Sizer doesn't believe school district goals necessarily have an impact on education within the district. Specifically, he reported:

> In good schools, the rationale is usually written out and made available for all to see, but few pay much attention to it, both because most curriculum statements are written in unspecific, and thus not very useful, language, and because there are few sanctions for not taking the schoolwide goals seriously. (p. 90)

Goodlad (1984) confirmed and expanded upon Sizer's concerns about the effectiveness of educational goals. In *A Place called School*, Goodlad reported:

> Comprehensive lists of goals are hard to find. Instead, one finds long lists of goals and objectives for the separate subject fields and, recently in many states and districts, lists of proficiencies students are to acquire for high school graduation or grade-to-grade promotion. (p. 50)

He also reported that there is "little evidence of goals consciously shared by the teachers and precious little dialogue about what their schools are for" (p. 50). Goodlad reviewed educational goals from historical data and state documents, synthesized those goals, and prepared a comprehensive listing of goals for education. That listing is available in the second part of this report.

Boyer (1983) agreed with Goodlad and Sizer and stated that "educational goals appear to be of only marginal concern" (p. 60). The vague goals found in many schools were ignored by teachers, principals, and students. He criticized the current structure and stated clearly, "a high school, to be effective, must have a clear and vital mission" (p. 301). He used the terms *vision* and *goals* interchangeably as can be seen in this summary quote, "What is needed, and what we believe these four goals constitute—is a clear and coherent vision of what the nation's high schools should be seeking to accomplish" (p. 67). Along with Goodlad's research, Boyer's four goals are discussed in the second part of this report.

As evident in the previous discussion, the terms that define the role or purposes of education are fuzzy and, perhaps, ill-defined. However, the search for goals for education apparently is useful and continues. The next section of this report provides a discussion about the goals for education as identified by educators and educational researchers.

Identifying Aims, Goals, Objectives, Requirements, and Outcomes

Throughout history educators have been concerned about identifying the goals for education. Even early educational philosophies, as established by the Greeks, identified, according to Dewey aims for education. This section of the report is divided into two parts. The first part discusses goals of education in the United States before 1983. In 1983, a challenging report entitled *A Nation at Risk* (1983) demanded that goals for education be revisited. The second part of this report discusses goals of education as identified in the literature after the 1983 report.

Goals of Education Before *A Nation At Risk*

In the United States one of the first comprehensive lists of goals for the high school can be ascertained from the material prepared by a committee established by the National Education Association in 1893—identified as The Committee of Ten (according to Boyer). They recommended the high school curriculum include English, mathematics, history, the sciences, Latin and other foreign languages—a strict academic curriculum that uses a requirement or input philosophy. Their goal was to prepare students for life, and the way they did that was to identify what students should be taught, (i.e., inputs). They believed that there "was no substantial difference between education for college and education for work" (p. 49). All subjects were to be taught to all students.

In 1913, approximately twenty years after the Committee of Ten prepared its report, another committee met to review the goals of education. This group, again appointed by the National Education Association, known as the Commission on the Reorganization of Secondary Education identified the seven Cardinal Principles (according to Boyer). According to the Commission, the Cardinal Principles were the "main objectives of education." The Commission, through its work, recognized that objectives could and must be acquired through multiple subject areas. However, the commission believed subject areas must be reorganized so they could contribute to the achievement of the objectives. The Commission identified the following Cardinal Principles or main objectives of education: (a) health, (b) command of fundamental processes (i.e., reading, writing, arithmetic, and oral and written expression), (c) worthy home membership, (d) vocation, (e) citizenship, (f) worthy use of leisure time, and (g) ethical character.

John Dewey's discussion on what he called the aims of education is especially interesting in light of the fact that previous groups of educators had been studiously attempting to identify specific goals or objectives of education. Dewey stated that it is futile to identify one aim of education. There may be several general aims of education, "all consistent with one another" (p. 111). The aims of education, according to Dewey change with the "needs of the contemporary situation. . ." (p. 111). He believed that "a given generation tends to emphasize in its conscious projections just the things which it has least of in actual fact" (p. 112). Consequently, aims of education would change as the needs of society change. Dewey identified the following three general aims of education: (a) natural development that focuses on health, vigor, physical mobility, and differences between people; (b) social efficiency that translates into industrial competence and good citizenship; and (c) culture that includes "appreciation of ideas and art and broad human interests" (p. 121). It is interesting to note that Dewey believed aims, partially stated, "come in conflict with one another" (p. 123), and only when they are integrated, are they consistent with one another.

Early in the development of the high school, and for that reason perhaps most influential in its continuing purpose and organization, the purpose of the high school was to prepare a relatively small elite group of students for efficient entry into higher education. Through the 1950s, a major purpose of several of the national study commissions was to review ways to better articulate the relationship between high school and college with the high school assumed to be the institution in need of change. While the purpose of preparing a select group of students for college comes under criticism, it always seems to remain a very high priority in the discussion and recommendations concerning purpose of the high school. Early in the high school development (1890s), the issue of preparation for college was handled by recommending that the high school focus on preparation for life; however, the best preparation for life was assumed to be the best preparation for college—

this was when high schools serviced a very select group of students. Later as the high school needed to serve a much larger group of students (some not so oriented or endowed with ability for intellectual scholarship), and as the need for a trained labor force increased, the overall purpose remained preparation for life but within this broad mission statement, the purpose was differentiated to provide some advanced general or common education and also either prepare students for college or for immediate entry to work.

In the 1930s the issue of education's role in social reconstruction was especially debated. Resolution seemed to be that education should play a role in preparing the young for social change but appropriately should leave reconstruction to the later democratic process. Also starting during this time was concern for assuring equal education opportunity in the purpose of public education. Each generation was to have a fair and fresh start in the competition for benefits of our society. Schools were to play a major role in the reshuffling process and later in the 1960s with actually compensating for earlier educational deprivations for certain groups.

In the 1950s with the advent of the Cold War and Sputnik, education was recognized for its role in assuring national purpose—national defense and technical superiority. The federal government began to take more initiative (particularly as evidence in federal expenditures) in curriculum reform, especially as it related to mathematics and science. In the 1960s, federal interest turned to the role of education in the War on Poverty. The purpose of education at this time was becoming all encompassing—the criticism soon became that education was aimless and not doing a very good job of anything. It was suggested that the high school begin to restrict its purpose as a means to focus energy and resources and thereby demonstrate effects.

These early reflections on the goals of education indicated that throughout U.S. history it has been important to identify and establish goals, objectives, aims, and purposes for the educational system. That need is as great today as it ever was. In fact, as a result of a critical 1983 report on education entitled *A Nation at Risk*, most educators are taking a closer look at the current goals of the education system. This report, prepared by the National Commission on Excellence in Education (1983), found that students in the United States were not doing as well as their predecessors or as well as comparable students from other nations. Consequently, as a result of the report and many others which followed, educators are under even more pressure to review the goals of education.

The Commission introduced its report as follows:

> Our nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. . . the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. . . . If an unfriendly power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. . . We have been committing an act of unthinking, unilateral educational disarmament. Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of the high expectations and disciplined effort needed to attain them. (pp. 5-6)

The Commission recommended a renewed commitment to excellence in education, which means individuals performing at the boundaries of their abilities and schools setting high expectations. However, the Commission believed that commitment to excellence did not have to be at the expense of a strong commitment to the equitable treatment of diverse populations, "The twin goals of equity and high-quality schooling have profound and practical meaning for our economy and society, and we cannot permit one to yield to the other either in principle or in practice" (p. 13).

Findings and recommendations of the Commission were categorized in the areas of content, expectations, time, and teaching. One of the Commission's findings was that secondary school curriculums have "homogenized, diluted, and diffused to the point that they no longer have a central purpose." In effect, there was a cafeteria-style curriculum in which the appetizers and desserts could easily be mistaken for the main courses. Recommendations of the Commission addressed the following: (a) strengthening of high school graduation requirements (particularly five *new* basics—English, mathematics, science, social studies, and computer science; foreign language for college bound); (b) raising of expectations for academic performance and conduct in schools and admission standards for college, (c) spending more time on new basics (e.g., more effective use of school day, larger school day, lengthened school year), (d) improving preparation of teachers and make teaching a more rewarding and respected profession (e.g., increase salaries, longer contracts, provision for master teachers), (e) holding educators and elected officials responsible for these changes and encouraging citizens to provide fiscal support and stability to bring about these changes.

Currently, educators are being challenged to provide the direction necessary for improving the educational system in the United States. Since 1983, many educational researchers have attempted to address the challenge before them. These researchers have studied the educational system and prepared reports based on those studies. Summaries of some of those reports are included in the next section of this report.

Goals of Education after *A Nation at Risk*

This section contains summaries of educational goals, outcomes, purposes, aims, and objectives as identified by educational researchers who have recently studied or evaluated the American educational system. The goals range from very specific objectives to very general aims. The goals of the different authors may compliment or contradict one another. They may make recommendations for an improved educational system or they may simply be reporting on the current state of the education. The purpose of this section is not to judge the quality or the value of the goals, outcomes, aims, and objectives, but is, instead, simply to provide a composite listing of the goals that are currently being discussed. This discussion will attempt to highlight some of the more recent research about American schools.

The first of the reports to be discussed was prepared by Theodore Sizer (1984). Sizer's *Horace's Compromise*, one of a series of three reports based on visits to high schools throughout the United States, presented an interesting, if somewhat critical, view of educational systems. Sizer recommended that late-twentieth century schools needed to have a "more appropriate purpose than a warmed-over version of principles promulgated in 1918" (p. 84). His comments indicated that modern schools should have two separate purposes: (a) education of the intellect, and (b) an education in character. Although he questioned how much of learning could be mandated by the state, he felt that there were some essential claims that the state could make on its citizens.

Education of the intellect, according to Sizer, could be defended in the following manner, "the essential claims in education are very elementary: literacy, numeracy and civic understanding" (p. 86). His definitions for each of those three areas encompassed many ideas and concepts. First of all, his definition of literacy "means more than decoding words" (p. 86). It means the ability to comprehend and to understand ideas and arguments, the ability to read easily and comprehend basic arguments, and the ability to present arguments orally and in clear writing. He defined the second area, numeracy, as the ability to use numbers, arithmetically and algebraically, as well as understand concepts, relationships, and logic. Finally, civic understanding included a "grasp of the basis for consensual democratic government, a respect for its processes, and acceptance of the restraints and obligations incumbent on a citizen" (p. 86). Sizer believed that these *three desiderata* provide the "essential context for responsible citizenship and government" (p. 86). Additional claims by the government, he believed, did not have much merit. For example, he stated, "the state has no right to insist that I be employable" (p. 86), "the state has no right or obligation to tell me how to spend my leisure time" (p. 87), and the "state has no claims whatsoever on my beliefs or character" (p. 87). He did, however, believe that the state could "assist me, if I wish, to become employable, to enjoy culture and leisure, and to develop myself fully" (p. 87). High school, according to Sizer, should be an "opportunity, not an obligation" (p. 88).

Sizer's second purpose for education-education of the character-required that "any school of integrity, public or private, secular or religious, try to help its students become decent people" (p. 121). Sizer used the term *decency* to encompass fairness, generosity, and tolerance. Even though he defended this purpose of education, he admitted that "it is difficult to find schools today that both formally articulate decency as an aim and precisely outline how the students can achieve it" (p. 121).

In 1985, the second in the series of three books dedicated to the review of the U.S. educational system, *The Shopping Mall High School* (Powell, Farrar, Cohen, 1985), followed *Horace's Compromise*. The book's name was chosen to reflect the diversity of curriculum found in the high school. The authors believed that the following two, somewhat contradictory, realities drive the system and have created a *shopping mall* within the high school: (a) high schools should be "genuinely accessible to virtually everyone" (p. 65), and (b) everyone should graduate from high school. The authors stated, apparently tongue in cheek, that the current high school horizontal curriculum, developed as a result of the above goals, is "one of the genuine wonders of educational history, a triumph of production skills, marketing techniques, and consumption values no less dramatic than the abundance of product lines available in shopping malls" (p. 13). They believed that the abundance of course offerings and the fact that the schools were neutral about academic mastery reflected a neutrality in goals for education.

The current shopping mall high school, according to the authors, is not working. The authors believed that in this high school learning is voluntary. Students who wanted to learn could; students who didn't want to learn, could avoid it. They believed teachers operated under unspoken contracts or treaties with many students. The treaties provided an acceptable situation—one that didn't unduly challenge either the teacher or the student. Finally, the authors talked about the ***unspecial student***. The one who is average, without special needs or abilities. They believed that the shopping mall high school was doing the unspecial student a disservice by not making her/him feel special.

The authors believed that there are "three major areas for renegotiation—purpose, push, and personalization" (p. 316). According to the authors, if teachers talked more with one another, they could "discuss curriculum in its proper context: what students should know and be able to do at the end of high school, not everyone to the same extent, but everyone in the same direction" (p. 320). In addition, they believed that the *life skills* high schools can teach—"speaking cogently, writing clearly, reading with understanding, listening with empathy, having facility with numbers, and solving problems" (p. 320)—could be taught in many educational domains. Essential ingredients for high schools, according to the authors, included focused educational purpose, the existence of push for students to achieve, and personalization which required knowing the students.

In 1986, the last of the three books published as a result of A Study of High Schools was published. *The Last Little Citadel,* by Hampel (1986) traced the history of American schools from 1940 to 1984. He discussed the NEA Committee of Ten work in 1893 and compared it to schools of later years. The *Foreword*, written by Theodore Sizer, states that "the pattern of a core of 'mainline subjects' has, at least in its overall structure, withstood decades of potential erosion to an astonishing extent" (p. x). Any changes that have occurred happened slowly and have been primarily a reflection of changes in society. Hampel believed that any major "redirection of secondary education will be hard to achieve" (p. 153).

The goals of education have changed little over the last forty years. To provide a short history of the goals, purposes, and trends of education, Hampel reported on these historical highlights which occurred between 1940 and 1980:

1. In 1944, a 400-page plan prepared by a commission of educational theorists identified "widely shared beliefs" (p. 37) about education. The report, assuming the students had a variety of needs, indicated that schools should provide academic and occupational preparation, as well as ethical sensibility, patriotism and self-awareness. According to the authors of the report, these skills and attitudes would help students more than "Latin declensions and botanical esoterica" (p. 35). Traditional classes were to teach skills and vocational classes would teach specialties. The common learnings for all students would include English, economics, civics, and aesthetics.

2. In 1947, the Commission on Life Adjustment for Youth was established by the federal Office of Education. Charles Prosser, chief spokesperson for the commission, believed that the academic areas studied in schools did not prepare students for life. The Life Adjusters claimed all students needed to study topics like effective living, family life and personal relations. The Life Adjusters movement lasted until about the middle of the 1950's.

3. In 1959, James B. Conant, author of *The American High School Today,* wrote that "in 'all but a few' schools, the sharpest were not working hard enough'" (p. 59). He made many recommendations for school improvement including grouping students by ability with the top 15% preparing for college and the remainder receiving vocational training. Conant wanted vocational education to be a part of a comprehensive high school, not a separate school.

4. Permissiveness and social unrest, characteristic of the late 1960s, created conditions for the development of responsive, flexible and unprejudiced school philosophies in the early 1970's. Hampel reported that in 1965 "development of positive self-concept and good human relations" was "seventh of eight educational goals; by 1977, that same objective was second of ten" (p. 137). Less regimentation and more choice were characteristic of the comprehensive high school. Young people were treated like adults. Liberal philosophies prevailed and the concept of equality was taken seriously.

5. In the 1980s, however, the educational system was severely criticized. SAT scores were declining, students from other nations were doing better on international tests,

the United States. was having a difficult time competing in a world market. *A Nation at Risk,* demanded educational reform. Other reports followed. Hampel reported that a "get tough tone" prevailed and "longer school days, longer school years, more homework, fewer electives, stiffer graduation requirements, and higher college entrance standards led the lists of reforms" (p. 144).

Hampel's conclusion from this historic review of educational changes is that "change will occur very tentatively as it has in the past. . ." (p. 154). He predicts there are to be "howls of protest from all the factions slighted by the 1980s emphasis on academic excellence" (p. 154).

During the same period that Sizer was chairing A Study of High Schools, John Goodlad (1984) was working on A Study of Schooling. In 1984, he prepared a report entitled *A Place Called School,* which provided insight regarding the behind the scenes investigation that had been conducted over several years. Chapter two of his report, entitled "We Want It All," identified the following set of goals which Goodlad recommended be used as "a beginning point in the dialogue about education and what schools are for" (p. 51). These goals were divided into four categories: (a) academic, embracing all intellectual skills and domains of knowledge; (b) vocational, geared to developing readiness for productive work and economic responsibility; (c) social and civic, related to preparing for socialization into a complex society; and (d) personal, emphasizing the development of individual responsibility, talent, and free expression. They are provided in complete detail below:

A. Academic Goals

1. Mastery of basic skills and fundamental processes
   - 1.1 Learn to read, write, and handle basic arithmetical operations.
   - 1.2 Learn to acquire ideas through reading and listening.
   - 1.3 Learn to communicate ideas through writing and speaking.
   - 1.4 Learn to utilize mathematical concepts.
   - 1.5 Develop the ability to utilize available sources of information.

2. Intellectual development

    2.1 Develop the ability to think rationally, including problem-solving skills, application of principles of logic, and skill in using different modes of inquiry.

    2.2 Develop the ability to use and evaluate knowledge, i.e., critical and independent thinking that enables one to make judgments and decisions in a wide variety of life roles—citizen, consumer, worker, etc.—as well as in intellectual activities.

    2.3 Accumulate a general fund of knowledge, including information and concepts in mathematics, literature, natural science, and social science.

    2.4 Develop positive attitudes toward intellectual activity, including curiosity and a desire for further learning.

    2.5 Develop an understanding of change in society. (p. 51-52)

B. Vocational Goals

3. Career education—vocational education

    3.1 Learn how to select an occupation that will be personally satisfying and suitable to one's skills and interests.

    3.2 Learn to make decisions based on an awareness and knowledge of career options.

    3.3 Develop salable skills and specialized knowledge that will prepare one to become economically independent.

    3.4 Develop habits and attitudes, such as pride in good workmanship that will make one a productive participant in economic life.

    3.5 Develop positive attitudes toward work, including acceptance of the necessity of making a living and an appreciation of the social value and dignity of work. (p. 52)

C. Social, Civic, and Cultural Goals

4. Interpersonal meaning

    4.1 Develop a knowledge of opposing value systems and their influence on the individual and society.

4.2 Develop an understanding of how members of a family function under different family patterns as well as within one's own family.

4.3 Develop skill in communicating effectively in groups.

4.4 Develop the ability to identify with and advance the goals and concerns of others.

4.5 Learn to form productive and satisfying relations with others based on respect, trust, cooperation, consideration, and caring.

4.6 Develop a concern for humanity and an understanding of international relations.

4.7 Develop an understanding and appreciation of cultures different from one's own.

5. Citizenship participation

5.1 Develop historical perspective.

5.2 Develop knowledge of the basic workings of the government.

5.3 Develop a willingness to participate in the political life of the nation and the community.

5.4 Develop a commitment to the values of liberty, government by consent of the governed, representational government, and one's responsibility for the welfare of all.

5.5 Develop an understanding of the interrelationships among complex organizations and agencies in a modern society, and learn to act in accordance with it.

5.6 Exercise the democratic right to dissent in accordance with personal conscience.

5.7 Develop economic and consumer skills necessary for making informed choices that enhance one's quality of life.

5.8 Develop an understanding of the basic interdependence of the biological and physical resources of the environment.

5.9 Develop the ability to act in light of this understanding of interdependence.

6. Enculturation

6.1 Develop insight into the values and characteristics, including language of the civilization of which one is a member.

6.2 Develop an awareness and understanding of one's cultural heritage and become familiar with the achievements of the past that have inspired and influenced humanity.

6.3 Develop understanding of the manner in which traditions from the past are operative today and influence the direction and values of society.

6.4 Understand and adopt the norms, values, and traditions of the groups of which one is a member.

6.5 Learn how to apply the basic principles and concepts of the fine arts and humanities to the appreciation of the aesthetic contributions of other cultures.

7. Moral and ethical character

7.1 Develop the judgment to evaluate events and phenomena as good or evil.

7.2 Develop a commitment to truth and values.

7.3 Learn to utilize values in making choices.

7.4 Develop moral integrity.

7.5 Develop an understanding of the necessity for moral character.(p. 53-54)

D. Personal Goals

8. Emotional and physical well-being

8.1 Develop the willingness to receive emotional impressions and to expand one's affective sensitivity.

8.2 Develop the competence and skills for continuous adjustment and emotional stability, including coping with social change.

8.3 Develop a knowledge of one's own body and adopt health practices that support and sustain it, including avoiding the consumption of harmful or addictive substances.

8.4 Learn to use leisure time effectively.

8.5 Develop physical fitness and recreational skills.

8.6 Develop the ability to engage in constructive self-criticism.

9. Creativity and aesthetic expression
    9.1 Develop the ability to deal with problems in original ways.
    9.2 Develop the ability to be tolerant of new ideas.
    9.3 Develop the ability to be flexible and to consider different points of view.
    9.4 Develop the ability to experience and enjoy different forms of creative expression.
    9.5 Develop the ability to evaluate various forms of aesthetic expression.
    9.6 Develop the willingness and ability to communicate through creative work in an active way.
    9.7 Seek to contribute to cultural and social life through one's artistic, vocational and avocational interests.

10. Self-realization
    10.1 Learn to search for meaning in one's activities, and develop a philosophy of life.
    10.2 Develop the self-confidence necessary for knowing and confronting one's self.
    10.3 Learn to assess realistically and live with one's limitations and strengths.
    10.4 Recognize that one's self-concept is developed in interaction with other people.
    10.5 Develop skill in making decisions with purpose.
    10.6 Learn to plan and organize the environment in order to realize one's goals.
    10.7 Develop willingness to accept responsibility for one's own decisions and their consequences.
    10.8 Develop skill in selecting some personal, life-long learning goals and the means to attain them. (p. 55)

At about the same time that the above reports were being prepared, other authors were also reviewing education and recommending changes. Sewall (1983) addressed the educational system from the premise that it needs to be restored to what it once was. He criticized the curriculum and the educational philosophy of the early 1970s. His disapproval was reflected in the following statement about school missions, "A hundred new pastoral and nonacademic school missions now seem to explain part of the nation's dwindling scholastic productivity" (p. 114). He believed the "more effective schools of tomorrow" must be based on the following "precepts of schooling" (p. 167):

1. "All students should receive instruction in academic subjects and thereby have the opportunity to develop their intellectual abilities to the fullest extent possible" (p. 167). The academic subjects provide "mental equipment," and "tools" for solving problems, being alert citizens and self-reliant workers.

2. "All courses of study and teaching methods should be subjected to rigorous critical examination to determine whether they promote intellect and self-discipline" (p. 170). Sewall believes that objectionable school practices arise from apathy toward general knowledge.

3. "Clear standards of performance should be set for all students, and those standards should govern the rate of student advancement" (p. 171). High standards must be established and maintained.

4. "Educators should hold high expectations for students of all backgrounds and capabilities" (p. 173).

5. "School personnel should be competent by education, training, and temperament to carry out their assigned responsibilities" (p. 174).

6. "Educators should resist efforts to increase school responsibility for the social and psychological welfare of students" (p. 177).

In addition, Sewall believed that students with "developed vocational interests" should place more "elective emphasis on the applied uses of academic knowledge" (p. 157). Cognitive skills and reasoning powers were identified as necessary skills for entry-level workers. His reform recommendations suggested that early "admission into community and technical colleges" (p. 157) would be appropriate for students with high vocational interests.

Boyer (1983) analyzed the American high school as an institution. He recommended several changes in the educational system, which included clarifying goals that focus on "the mastery of language, on a core of common learning, on preparation for work and further education, and on community and civic service" (p. 301). Like Goodlad, Boyer also included a chapter entitled "We Want It All." In this chapter, his discussion about the current purposes of education went beyond even the extensive listing that Goodlad had provided. Boyer stated, "Today's high school is called upon to provide services and transmit the values we used to expect from the community, the home and the church" (p. 57). Boyer criticized the "vague and wide-ranging mandates" (p. 58) for public education. He believed that they "trivialize the mission of public education" (p. 58). To rectify the situation, he stated a need for "clear and coherent vision of what the nation's high schools should be seeking to accomplish" (p. 67). He listed the following four essential goals for education:

1. "Help all students develop the capacity to think critically and communicate effectively through a mastery of language" (p. 66).

2. "Help all students learn about themselves, the human heritage, and the interdependent world in which they live through a core curriculum based upon consequential human experiences common to all people" (p. 67).

3. "Prepare all students for work and further education through a program of electives that develop individual aptitudes and interests" (p. 67).

4. "Help all students fulfill their social and civic obligations through school and community service" (p. 67).

A few years later, Walker and Soltis discussed, from an historical perspective, "three overarching educational tasks" (p. 73), which they later identified as the "three basic educational aims" (p. 73). According to the authors, these three aims—"to cultivate knowledge, to sustain and improve society, and to foster the well-being of individuals" (p. 73)—caused conflict between the "proponents of the different aims" (p. 72). The Walker and Soltis conception of education recognized that education is not "monolithic, but has room for some diversity and multiplicity as well as responsiveness to new conditions and emerging social values" (p. 73). Therefore, they suggested that a balance be achieved between those aims and that each of those aims was a legitimate educational task.

They provided the following examples of aims of education that would achieve each of the above three tasks.

1. Cultivate knowledge (transmit it to a new generation)
    - Literacy
    - Command of basic skills
    - Mastery of basic facts and theories in fundamental subjects
    - Critical thinking
    - Problem solving
    - Good study skills and work habits
    - Desire to learn (p. 73-74)

2. To sustain and improve society (the social role of education)
    - Civic responsibility
    - Vocational preparation
    - Development of democratic attitudes
    - Health
    - Personal and social adjustment
    - Ethical values and behavior (p. 75)

3. To foster the well-being of individuals (personal fulfillment)
    - Self-realization
    - Self-esteem, emotional stability, and mental health
    - Creative expression
    - Cultivation of personal talents and interests
    - Wise use of leisure time
    - Preparation for the stresses of modern life
    - Health and safety (p. 76)

In 1987, E.D. Hirsch, Jr. focused on what he determined was the "great hidden problem in American education" (p. 1). He found that the students in the United States were not being taught a shared body of information, which they must have if they are to communicate with one another. Because of this belief, he stated that the following educational goal—"mature literacy for all our citizens" (p. xiv)—was essential and basic to education. According to Hirsch, our schools have failed to provide this common body of knowledge, which he called cultural literacy, and he blamed that on "faulty theories promulgated in our schools of education and accepted by educational policy makers" (p. 110).

These theories included blaming society, teachers, and the system. He believed that those theories were faulty and the problem with the American school curriculum was that it was "fragmented" both "horizontally across subjects and vertically within subjects" (p. 116). His solution was to provide a two-part curriculum that he identified as the "extensive curriculum" and the "intensive curriculum."

The extensive curriculum contained the "traditional knowledge that literate Americans share—cultural literacy" (p. 127). However, he recognized that the extensive curriculum was not a "sufficient basis for education" (p. 128), therefore, he deduced that the intensive curriculum was also necessary. The intensive curriculum "encourages a fully developed understanding of a subject, making one's knowledge of it integrated and coherent" (p. 128). Hirsch stated that the intensive curriculum allowed students and teachers to "work intensively with materials that are appropriate for their diverse temperaments and aims" (p. 128). Hirsch warned repeatedly that the learning of a shared body of knowledge cannot be left to chance. It must be systematically taught if students are to be literate.

Adler (1982), in writing *The Paideia Proposal* on behalf of the members of the Paideia group, listed three main objectives for public schooling. According to the Paideia group, those objectives, identified simultaneously as common callings and goals, should be achieved by every student using a one-track educational system. The objectives were as follows:

- Preparation to go on learning, either at advanced levels of schooling, or in adult life, or both.

- "Adequate preparation for discharging the duties and responsibilities of citizenship" (p. 17) including "cultivation of the appropriate civic virtues" (p. 17) and an understanding of the government and its principles.

- Preparation for the "need to earn a living" (p. 17), not by training for a particular job, but by giving "basic skills that are common to all work in a society such as ours" (p. 17).

In order to achieve those goals, Adler reported that education must be "general and liberal," "nonspecialized," and "nonvocational" in the "sense that it does not narrowly prepare [students] for one or another particular job" (p. 18). The Paideia group recommended that every student follow the same "course of study" for twelve years. The only choice given to them would be the choice of a second language. The same course of study was defined by Adler in the following way:

- "Acquisition of organized knowledge by means of didactic instruction (teaching by telling), lectures and responses, textbooks, and other aids in the three areas of subject matter indispensable to basic schooling—1) language, literature and arts, 2) mathematics and natural sciences, and 3) history, geography and social studies" (p. 23).

- "Development of intellectual skills by means of coaching, exercises and supervised practice in the operations of reading, writing, speaking, listening, calculating, problem-solving, observing, measuring, estimating, and exercising critical judgment" (p. 23).

- "Enlarged understanding of ideas and values by means of maieutic or socratic questioning and active participation in the discussion of books (not textbooks) and other works of art and involvement in artistic activities such as music, drama and the visual arts" (p. 23).

All students, in addition to studying the above, needed physical education, health instruction, manual activities, such as "typing, cooking, sewing, wood- and metal-working, crafts using other materials, automobile driving and repair, maintenance of electrical and household equipment, and so on" (p. 33). Finally, Adler recommended that students be instructed in choosing and finding a career. Instruction in this area included introduction to various occupations and careers, "their significance and requirements and their rewards and opportunities" (p. 33). Although Adler commented that "our recommendation is not a monolithic program to be adopted uniformly everywhere" (p. 34), he did insist that all schools adopt the "central features of the model as an ideal to be realized in a variety of specifically different ways" (p. 34).

Oakes and Lipton (1990) voiced concern about the current factory model, traditional curriculum, and the behavioral objectives used to express the curriculum. They believed that learning is not a "tidy cause and effect equation" (p. 84) as suggested with the behavioral objective approach. They warned that "parents and policy makers should not confuse long lists of 'behavioral objectives' or scientific sounding 'diagnosis and prescription' methods with a rich curriculum" (p. 15). They recommended not only a curriculum that was rich in meaning, but one that could also be taught using a cognitive approach. This two-part, "curriculum rich in meaning" (p. 82) can be summarized as follows:

- The academics—a common curriculum, or knowledge all student should learn—organized around a cognitive rather than behavioral view of learning taught in multidimensional classrooms. This curriculum included the following knowledge that society believes all children need. Oakes and Lipton defined context as "essential ideas inextricably connected to a context that explains each idea and why it matters" (p. 96).

  "Language in its contexts" (p. 96): Use literature, drama, public speaking, recreational reading and research in connection with each other.

  "The Context of Other People's Language"

  "The Context of Mathematics" (p. 98): Apply math skills and ideas to real life and to other subjects such as science, art, social studies, language arts,

> "Studying Society in Contexts" (p. 98): Do original research and reenact society's decision making and problem solving around critical social issues.
>
> The other basics—described as "essential to our children and to our culture" (p. 109) include art and music, health and physical education, and work-related skills.

Oakes warned that although "concern about academics is warranted" (p. 110), what schools needed to do was combine the academics and the nonacademics "into a single priority" (p. 110). They reported art, music, health, physical education, and a whole array of subjects related to work easily engage students in active, real world problem solving. These subjects could quite naturally require students to discover and define problems and view them in sense-making contexts (p. 111).

Because, according to the authors, jobs will demand workers who apply basic knowledge and problem-solving strategies, the challenge schools will face is to "organize work-related education around meaningful knowledge" (p. 123). In fact, they surmised that the "time has come to rethink what vocational education should be and how it can best be delivered" (p. 125). They adamantly pronounced that vocational education must be reintegrated into the "mainstream of school curriculum" (p. 125) and recommended that "all students and all employers will be better served by an integrated view that combines work with the head and hands" (p. 125).

The previous lists of goals and aims of education provides ample material for thought and discussion. However, before identifying specific goals for an educational system, the advice given by Honig (1988), California State Superintendent of Public Instruction, should be considered. He made what he calls a "simple observation" about goals for schools. He said "any school system, no matter the size, must achieve its goals one student at a time. That is to say, when we discuss the purpose of the U.S. public schools, we are really talking about the effect we wish to have on the individual, multiplied several million times" (p. 27). He goes on to explain that each of us has three "discrete social identities: that of the worker, that of the citizen, and that of the private person" (p. 27). According to Honig, consideration of each of those identities points the way to what schools should accomplish.

Honig made the following comments about each identity and the schools responsibilities in helping students achieve success in those identities:

- A basic function of our school system is to prepare students to enter the world of work and earn a living (p. 27).

- Our citizenry must be educated because in a democracy people make the decisions (p. 32).

- Develop the potential skills, abilities, aptitudes, and talents of the student in order to encourage the full flowering of each child's humanity (p. 34).

Honig stated that these goals "are not in conflict as much as they are mutually reinforcing" (p. 37). He also cautioned that these goals are best obtained through a "traditional education," which he identified as follows:

- One which "leads the student through a rigorous curriculum in the academic disciplines" (p. 42). Honig's "irreducible core" included English, history, a foreign language, mathematics, science, the fine arts, and health and physical education" (p. 54).

- One which has "high expectations of all parties concerned—students, teachers, parents, and administrators—and holds them accountable" (p. 42).

Honig said the reason traditional education works is because "it stresses active language mastery, lays a broad foundation for learning" (p. 58) and engages the whole student. Honig used Hirsch's. research on reading and understanding to justify his position.

In addition to the traditional education, Honig acknowledged that "properly structured, vocational education has a helpful role to play in high school education" (p. 62). He did not view this role as one that prepared a student for a particular job. In his view, a traditional education is the best preparation for work—but, one that used *hands-on* applied courses to "reinforce the lessons from the academic curriculum" (p. 62).

In 1990, Richard Elmore edited *Restructuring Schools*, which was "designed to help policy makers, educators and researchers develop a deeper understanding of the issues of school restructuring" (p. xii). Several of the authors discussed the role of goals, missions, visions, and objectives as they presented school restructuring from several perspectives. Two of those authors, Mary Anne Raywid and Michael Cohen, provided advise for the development of school missions and goals.

Raywid's advice centered around restructuring as a fundamental change. Her discussion of the school mission stated that schools have two functions: (a) "to prepare the young to maintain and perpetuate intact our society, government, and economy" (p. 160), and (b) "to enable the young to realize their unique pote[illegible]veloping their individual interests and talents" (p. 160). According to Raywid, the following concerns must be addressed during the development of a school mission: (a) students are not there by choice, (b) the mission must guide the students in "positive directions" (161), (c) students must be able to access the services, and (d) equity and equal opportunity must be considered. In addition, schools must shift their mission from "effective service delivery" to "successful learning" (p. 162).

Cohen, author of the chapter entitled "Key Issues Confronting State Policy makers," agreed in part with Mary Anne Raywid's assessment of school missions. He advised that "what students learn is at least partly a function of what schools are expected to teach them" (p. 260). He found that instructional goals were frequently set by the state and local school boards. His concern was that the goals frequently emphasized basic skills and failed to incorporate higher-order skills. He concluded that schools must establish goals that reflect "student acquisition of higher-order skills" (p. 258). He insisted that states "assume larger responsibilities for setting educational goals and defining standards for outcomes" (p. 276). He found that states either listed outcomes in a vague form with "prescriptions for youngsters to reach their full potential," or they provided "lengthy lists of instructional objectives reflecting subject matter course requirements" (p. 276). Cohen believed there was a middle ground.

Further insight can be gained from a recent book written by Roland Barth (1990), which dealt specifically with the teachers and principals who work in the schools. Barth indicated the need to develop a rich personal vision that operated as a guide for the educational program within the school. He reported that "researchers are finding a consistent relationship between the presence of teachers' and principals' visions and the effectiveness of their schools" (p. 151). Barth defined a "personal vision" as one's overall conception of what the educator wants the organization to stand for; what its primary mission is; what its basic core values are; a sense of how all the parts fit together; and, above all, how the vision maker fits into the grand plan" (p. 148). Barth believed that currently our public schools are "working, but could work better" (p. 147). In fact, Barth would predict that schools need a vision if they are to improve and that teachers, principals and parents within the school must be the ones to develop the vision for the school.

Over the years, Barth has developed his "personal vision" of a good school. The vision, which he discusses in his book, contains the following elements:

1. 1. It is a "community of learners" (p. 161) - a place where everyone is teaching and learning simultaneously.

2. It is a collegial school - "everyone is a staff developer for everyone else" (p. 163).

3. Adults and students are encouraged to take risks. Students must be less docile, "and more inventive and adventuresome in their thinking" (p. 164).

4. It provides opportunities for "recommitment" (p. 166). Change and choice are evident.

5. It "offers great respect for difference among people" (p. 168).

6. It is a place for philosophers - teachers and students ask *why* (p. 169) questions.

7. There is a great deal of humor - "humor can be the glue that binds an assorted group of individuals into a community" (p. 170).

8. It is a "community of leaders" (p. 171) - students, teachers, counselors, everyone gets a chance to be a leader.

9. It is a place with low anxiety and high standards. According to Barth, research shows that "attention, learning, performance, retention and recall all diminish when

anxiety of the learner is high" (p. 172). Yet high standards frequently cause high anxiety. Teachers must maintain high standards with low anxiety to enhance learning. Barth believes the balance is critical.

Barth's personal vision is only provided so the reader can understand the elements of his particular vision. He strongly prescribed that each teacher and principal develop a unique personal vision. His conclusion voiced his concern that "a teacher or principal or professor" cannot be "a serious agent of change within a school, operating only from someone else's prescription or vision" (p. 178). He warned that implementing someone else's "ideas and ideals" is always a "halfhearted enterprise" (p. 178).

After reviewing the current literature on aims, goals, purposes, objectives, and outcomes of education and with Honig's observations and Barth's warnings firmly in mind, the design group turned to the final section of this report; developing aims, goals, requirements, outcomes, and objectives.

Developing Aims, Goals, Requirements, Outcomes, and Objectives

The following quote from Walker and Soltis (1986) characterizes the nature of goals in education:

> The history of American education hardly can be said to support any consensus on aims for education, unless it is the whole set of all aims ever seriously proposed. The fact is that no substantial agreement exists among philosophers, the public, or the profession on what should be the aims of a general education for all. (p. 69)

With the above comment in mind, how then do school districts reach a consensus on educational goals? Walker and Soltis's somewhat cynical response, "Lack of consensus and controversy over aims of education, having continued for centuries, are likely to be with us permanently" (p. 70) may indicate that the question hasn't been answered.

They discussed two methods they believe are currently being used to determine aims for education—the rational scientific method and the political method. The rational scientific method required a "cool, dispassionate objective approach" (p. 78); the political method suggested dialogue, struggle, and negotiation as the process of accommodation.

The first method was conducive to letting educators decide; the second might have resulted in a vote by all those affected by the goals, including parents, students, teachers, administrators, and citizens.

Because Walker and Soltis found a conflict between the two methods, and because they felt that "curriculum decisions should reflect both, yet the two do not always agree" (p. 79), they recommended a different form of decision-making—participative social planning. According to the authors, "participative social planning will have to be designed to enable both experts and the public to determine jointly, over an extended period of time, the shape of the educational programs and policies" (p. 79). Participative social planning requires a "carefully thought-out set of institutional arrangements" that merges "practical, political and technical-rational" methods of decision-making.

Sizer appears to agree with the Walker and Soltis solution for the development of goals. He believes schools must make many choices available to students, but only after they have first meet fundamental standards of literacy, numeracy, and civic understanding. In fact he states "the alternative—a course of study mandated as the result of decisions reached through special interest politics and unrelieved majority rule—is both insensitive educationally and unAmerican" (p. 111).

Goodlad provides added insights into the development of educational goals. He believes that when we develop educational goals, we should "address ourselves to such questions as the significance and meaning of those goals, whether they are comprehensive, implications for policy and practice, and whether or not we intend to use them for teaching and learning." The above directive was presented by Goodlad to guide school board members, parents, students, and teachers in their efforts to develop a goal-oriented educational system.

Finally, Barth provides the following look at educational goals. First he reminds us that states must assume responsibility for setting goals. Second, the district must establish goals that are consistent with state goals and, finally, "schools must be responsible for establishing annual goals within the context of district goals" (p. 267). In order to do that, Barth recommends that "school districts need to establish school level governance organizations, such as a school council composed of teachers, administrators, parents and community members" (p. 268).

In conclusion, this report provides the following overviews, thoughts, and insights regarding the development and implementation of learner outcomes. These statements both summarize the material in the report and provide direction for those who wish to identify learner outcomes for their schools.

- Throughout the literature and over the past several years, educators and researchers have identified, both through research and through observation and analysis of educational systems, a myriad of aims, purposes, goals, objectives, and outcomes for education.

- Terms like aims purposes, and goals have defined and explained the role of the educational system. Terms like objectives and outcomes have been used to identify what the student is expected to achieve.

- The search for aims, purposes, goals, objectives and outcomes can be defined as an ill-structured problem—one which does not have one absolutely correct solution.

- Currently, most authors believe that district goals do not have an impact on education within the district. Vague, unclear, poorly written goals and objectives are ignored by teachers, principals, and students.

- The goals and objectives for education change as the needs of society change. As Dewey stated, "a given generation tends to emphasize in its conscious projections just those things it has least of in actual fact."

- Educational goals, as currently written, range from very specific objectives to very general aims. They both compliment and contradict one another.

- Only when the goals and objectives are integrated, are they consistent with one another.

- Goals have changed little over the past one hundred years. For the most part, according to Goodlad, the goals and objectives that have been identified can be divided into the following categories: academic; vocational; social, civic, and cultural; and personal.

- Currently, educators are being challenged to provide direction for improving the educational system in the United States. Establishing appropriate objectives and outcomes for students is an important part of the process.

- In addition to discussing the importance of developing goals and objectives for learning, authors have discussed the importance of the role of the educator in helping students achieve those goals and objectives.

- The establishment of goals and objectives is both a rational and a political process. Participative social planning may allow this process to be implemented.

- Questions to consider during the development of goals and objectives include:

  What is the meaning and the significance of the goals and/or objectives?
  What are the implications for policy and practice?
  Do we intend to use them for teaching and learning?

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Appendix C

Learner Outcomes: Design Specifications and Selected Learner Outcomes for the Comprehensive High School of the Future—Choosing the Keystone

LEARNER OUTCOMES: DESIGN SPECIFICATIONS AND SELECTED LEARNER OUTCOMES FOR THE COMPREHENSIVE HIGH SCHOOL OF THE FUTURE—CHOOSING THE KEYSTONE

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LEARNER OUTCOMES: DESIGN SPECIFICATIONS AND SELECTED LEARNER OUTCOMES FOR THE COMPREHENSIVE HIGH SCHOOL OF THE FUTURE— CHOOSING THE KEYSTONE

In considering the aims and objectives of education, decisions for the comprehensive high school are particularly problematic. The very nature of being comprehensive is sometimes taken to contradict a discernible focus for its educational programs. At certain times or in particular places the high school is harmonious with its community, crisp with purpose, and a fearless assembly of learners and teachers. In its most desirable state, the comprehensive high school offers all its secondary students a map and a choice of routes so that each student is able to select an educational program that encourages competence for the transition to post-secondary experiences (i.e., work, family life, college, or military services). In its actual state, clarity of purpose and goals have been obscured and overshadowed by uninformed choices using the shopping mall approach to the educational offerings, which lack relevance to students' lives.

The sharp contrast in many comprehensive high schools between the desired state of affairs and the current state of affairs is a practical problem characterized by a lack of focus. Resolving the problem of fuzziness in purpose is a central issue in redesigning the high school. The Design Group for New Designs for the Comprehensive High School. used their first meeting to deliberate and make a keystone decision about the purpose and desired outcomes of the comprehensive high school.

The Keystone Decision

The choice of the word *keystone* is an apt adjective for the type of decision that had to be made by the design group. A keystone is a wedged-shaped piece at the crown of an arch that locks the other pieces into place. When the word is used to describe the quality of a decision for an educational design problem, it suggests a uniquely important decision upon which all associated decisions will depend for support. Once the decision about the desired learner outcomes for the comprehensive high school is made, it will support subsequent decisions about the learning process (i.e., curriculum, instruction, assessment), as well as decisions about school organization, staffing, partnerships, and costs.

The choice of the word keystone is important for a second reason. A keystone is visible at the top of an arch and often is chosen for its aesthetic qualities as well as for its functional qualities. It appeared to be a word better suited to the work of a design group than other choices such as *foundations* or *building blocks*.

Thinking in terms of the aesthetic qualities also increases the possibilities for the representational forms of the design conceptualization. In representational form, the desired learner outcomes for a secondary school become the expressed mission or vision for the school. The difference between keystone and foundational decisions about the purposes of school is illustrated by the following story:

One member of the group told a story about visits with high school principals that illustrated the difference between highly visible and invisible school mission statements. When asked about the mission of the particular high school, typically the principal of a comprehensive high school pulled the mission statement—if one existed at all—out of a drawer. Teachers and students often could not articulate the mission nor was it visibly and forcefully displayed in the school building.

In contrast, the story teller went on, the missions of the twelve exemplary urban career-oriented high schools, as reported by Mitchell, Russell, and Benson (1989) were visible and concisely expressed; they were identifiable and could be expressed by students and staff alike.

This story suggests that the mission statements of many comprehensive high schools often exist as foundation blocks in a figurative and literal sense. The statements may serve as a base to build upon, but are not visible to any of the stakeholders of the school and few can state the words in the statement. In addition, as the statements are "buried" there is no reason to consider the aesthetic qualities of the statements. They do not invite discussion about their goodness nor their ability to inspire and motivate the imaginative efforts of the people in the school. In contrast, the mission statements in the exemplary schools are visible. Much like the keystone, they support and enhance the qualities of the school.

Forms of Representation

When the practical problem of designing learner outcomes is approached constructively and aesthetically, there is an opportunity to discuss the desired outcomes of learning and the inspired, creative, and attractive "forms of representation," a phrase that Eisner (1982) uses to refer to the "vehicles through which concepts that are visual, auditory, kinesthetic, olfactory, gustatory, and tactile are given public status. Public status might take the form of words, pictures, music, mathematics, dance, and the like" (p. 47).

Eisner's ideas about concepts and their representational forms encouraged the Design Group to consider a broader conceptualization of learner outcomes and more choices in the ways that they will be publicly represented. The final result may look more like an architect's sketch book containing several school design archetypes rather than an engineer's blueprint for a unique construction.

The on-going and somewhat public collaboration of the Design Group also has the potential to generate ideas that were not identified originally in the design problem. Eisner explains about approaching conceptual work aesthetically:

> [It] is a matter of qualitative negotiation. Although the work might have been initiated as a desire to impose a concept upon pliable material, the work itself gradually begins to *participate* in the negotiations. Gradually the work *tells* the artist what is needed. What may have been begun as a lecture becomes a conversation. What may have been started as a monologue becomes a dialogue. It should not be surprising that the process itself yields ideas that were not a part of the initiating conception. (p. 51)

The Search for Good Learner Outcomes

From a working paper by Pearce, Beck, Copa, and Pease (1991) the Design Group reviewed the history and current practices of aims and objectives for public schools as a way to look at possible learner outcomes. Keeping the twenty-first century as a target, the group interacted with a composite version of 1990 outcomes from carefully selected illustrations or examples of state and district outcomes . These examples represented ideas from the best in the current practice of outcome based education (OBE). At the same time the group considered two alternative sets of learner outcomes from Eisner (1991) and Giroux (1988).

Examples of State and School District Learner Outcomes

The composite version of 1990 outcomes resulted from one approach to analyzing the examples from several sources: (a) high profile OBE districts located in Johnson City, New York; Glendale, Arizona; Arlington Heights, Illinois; and Rochester, Minnesota, and from states such as Minnesota and Connecticut; (b) well-known national reports such as *A Nation at Risk*, *The Forgotten Half*, *America's Choice: High Skills or Low Wages*, and *Workplace Basics*; (c) reports from the National Center for Research in Vocational Education (NCRVE) (e.g., *Exemplary Urban Career-oriented Secondary School Programs* by Mitchell, Russell, & Benson, 1989) and individuals who generally receive recognition for their knowledge of the practices of secondary schooling in the United States such as John Goodlad, Theodore Sizer, Ernest Boyer, and Jeannie Oakes.

The project staff identified the desired learner outcomes in the above work, wrote the outcomes on one-to-a-note-card, sorted the note cards into groups of like outcomes, then selected samples from each of the groups. The outcomes seemed to fall into six groups[1]; two discipline specific groups (knowledge and application) and four areas of personal development (i.e., personal, social/civic, vocational, and physical). When constructed this way, our list turned out to be hearty—there was a bit of everything—but bland and uninspired, much like the hot dishes that Garrison Keillor described in his stories about life in Lake Wobegon.

Learner Outcomes—Alternatives

The Design Group set the bland outcomes aside and examined two seemingly more provocative sets of outcomes. Eisner (1991) proposed six aims that count in schools: (a) teaching children that the exploration of ideas is sometimes difficult, often exciting, and occasionally fun; (b) helping youngsters learn how to formulate their own problems and how to design the tactics and strategies to solve them; (c) developing in the young multiple forms of literacy (the ability to encode or decode meaning in any of the forms used in the culture to represent meaning); (d) teaching the young the importance of wonder and imagination; (e) helping children realize that they are part of a caring community; and (f) teaching children that they have a personal signature.

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[1] Outcomes for aesthetic learning might have been a seventh group. We found only five examples of outcomes that we considered unique in purpose. We decided to include them with the group we called "knowledge of disciplines."

Giroux (1988) also proposed four aims for the high school from a critical theory perspective. These were (a) helping students to differentiate between the notions of directive (concerned with ends) and productive (concerned with means) knowledge; (b) making explicit the traditional hidden curriculum (unstated norms, values, and beliefs that are transmitted to students through the underlying structure of a given class); (c) helping students develop a critical, political consciousness, including the joys and responsibilities of full civic participation; and (d) helping students become conscious of their own frames of reference. Some of the ideas expressed by these sets of learner outcomes were bolder and in some respects more appealing to the Design Group members than the composite set of outcomes described earlier.

Problems Concerning Developmental Nature of Learning

At this point, Design Group members brought two concerns to the surface. The first concern had to do with the developmental nature of learning, learners, and educational settings. It was suggested that a good set of learner outcomes, whether it represented the best in current practice or a better vision for the future, must be strong enough to support the growth and development of all students and maintain the evolution of systems of schooling over at least a decade. The Design Group expressed a need to find outcomes for comprehensive secondary schools that were cognizant of adolescent development and the ecology of school systems, and at the same time created a coherent, yet bold and focused, vision for the school design.

About the first concern, the Design Group returned to the findings of John Goodlad (1984). Goodlad and his research team had examined mission statements and learning objectives from states and districts throughout the United States. His findings brought together the purposes of school that are common to the United States experience and the developmental needs of students. At the beginning of the twentieth century the purpose of the high school was to prepare a relatively small elite group of students for efficient entry into higher education schools. In the next century the secondary school must serve almost all adolescents over the age of fourteen; and according to Goodlad, help students pursue their academic, vocational, social, civic, cultural, and personal goals.

The second concern focused on the process of examining disjoined learner outcomes from several states and districts. When the example outcomes from districts, states, experts, and national reports were first separated and then reconstructed, they appeared disjointed and frequently the original meaning of the outcomes was partially lost. The resulting categories did not seem to be a true reflection of the intent of the original outcomes. The Design Group looked for an example from one source that could serve as a starting point.

A Keystone Decision

The Design Group and the research team came to sense together—one way to think about its working definition of consensus—that it was time to make a preliminary decision about desired learner outcomes. It was time to make the keystone decision.

Design Specifications of Learner Outcomes

The following design specifications were established as useful for making the decision:

1. *Learner outcomes should be able to be described in no more than one-half of a standard printed page.* A short statement has some opportunity to be of clear focus and provide direction to educators. If a verbose list of goals or outcomes is produced, as some of the states and districts have done, then almost any list becomes acceptable. Long lists of outcomes do little more than pan the horizon without focusing on what is most interesting and important. Lengthy inventories also tend to obscure rather than sharpen the focus. Long, fuzzy lists make the keystone less clearly visible and its good qualities are obscured.

2. *Learner outcomes should focus on the customers of the school.* Just who the customers are needs more discussion. Is it students? Parents? Post secondary educational institutions? Other teachers? American business enterprises? All citizens? The people of other nations? The Design Group members represented several of the interests of the above stakeholders. The preliminary specification was to put students' wants and needs as a primary focus, and at the same time, recognize that other groups have legitimate interests to be represented.

3. *Learner outcomes should survive tests from the stakeholders.* The goals of *America 2000* offer one test of political reality. The school organization

recommendations from *America's choice: High skills or low wages?* offer another test. Other tests to consider are student performance indicators, the Gallup Poll of citizens, and goals of academic discipline groups such as the National Council of Teachers of Mathematics.

4. *Learner outcomes should represent balanced attention to all areas of human talent and development.* Learner outcomes for the academic and vocational goals should be integrated to indicate that both are important for functioning in today's complex society. To continue to refer to academic outcomes and vocational outcomes works to maintain the dichotomy.

5. *Learner outcomes should involve reaching for a meaning of educational excellence that provides challenge and opportunity, perhaps beyond our present grasp.* For example, a more conservative set of outcomes implies that we can produce and account for our promises with little risk. Another set of outcomes may represent higher purposes but be less measurable and thereby involve more risk. If we allow the current knowledge of measurement in educational psychology to limit our aims, then we have, in essence, proscribed our vision for student learning by a single aspect of a complex and dynamic process.

6. *Learner outcomes should convey the belief that they represent goals for all students.* At the same time, the learner outcomes should not be seen as minimums; many students should be encouraged and expected to express the outcomes in more accomplished and creative ways. To reach these learning expectations for all students will mean considerable effort to expand the flexibility and diversity in the learning process (i.e., curriculum, instruction, and assessment) and support services for students.

The Adopted List

Considering the above decision specifications, the Design Group agreed to adopt the learner outcomes which follow to guide the project at this stage. The list has some limitations, which need to be kept in mind, but it is a representation of the best available thinking and process of learner outcome development. As of July, 1991, Minnesota was the only state to have legislated outcome based education for its public schools. These outcomes are the result of over two years of work by several hundred Minnesota citizens (i.e., professional educators and many others). Minnesota's outcomes also include working definitions, lists of competencies under each outcome, requirement for a personal learning plan, a three-level performance scale (i.e., adept, advanced, and exemplary), and demand for a comprehensive plan for verification of achievement.

The Design Group concluded from its research—much as Spady announced at a 1991 Outcome Based Education conference in Colorado—that the Minnesota list is about the best we have *right now*. For purposes of guiding the design work, it was chosen to be the keystone; it will serve to support and envision the next phases of the work.

The Minnesota State Board of Education (April, 1991) adopted the following Secondary Graduation Outcomes: As of that time, Minnesota was the only state that legislated outcome-based education for all K-12 public schools.

Secondary Graduation Outcomes

In order to lead productive fulfilling lives in a complex and changing society and to continue learning:

> *The graduate shall demonstrate the knowledge, skills, and attitudes essential to:* (a) communicate with words, numbers, visuals, symbols and sounds; (b) think and solve problems to meet personal, social, and academic needs; (c) contribute as a citizen in local, state, national, and global communities; (d) understand diversity and the interdependence of people; (e) work cooperatively in groups and independently; (f) develop physical and emotional well-being; and (g) contribute to the economic well-being of society.

Checking the Outcomes Against the Design Specifications

How does the adopted list of learner outcomes stand up to the above design specifications? First, the learner outcomes list is no longer than one-half page. Together with related support materials, it is focused enough to provide direction for educators. Second, the list suggests that the learner is the key customer of public secondary school;

yet it recognizes the interests of local, state, national, and global communities and the need to understand diversity. The third specification, surviving tests of reality such as the one offered by the goals of *America 2000*, will be better measured in retrospect, although the list clearly calls for competency attainment; the OBE philosophy versus the Carnegie unit approach of *A Nation at Risk*.

The fourth specification called for outcomes that represented balanced attention to all areas of human talent and development, particularly for integrated academic and vocational outcomes. Integrated and developmental learning can be facilitated with the adopted list. Although some readers may interpret item (g) to be a vocational outcome and item (a) to be primarily academic goals, nothing in the language establishes the dichotomy the Design Group was seeking to avoid.

The Design Group was not certain that it had satisfied specification five (i.e., finding the *right* place between feasibility and challenge) and specification six (i.e., all students reaching the outcomes and more students reaching beyond the minimums). Perhaps the adopted list of outcomes is too conservative; too safe. Minnesota's Board of Education was clear in not wanting to be held responsible for outcomes that they can not now deliver or measure by today's measurement technology. In this respect, the list may not stimulate higher meanings of educational excellence.

A Final Point

Earlier the Design Group had proposed candidates for a school signature. As the effort to represent the most desired learner outcomes for the comprehensive high school of the future continues, one other interaction must take place; that interaction is between our school's signature and its design specifications.

The initial symbolic ideas include the freedom and opportunity of a soaring eagle, the learning community found in the one room school, the power of the integrated silicon chip, the potential and persistence suggested by the concept of hope, and the new possibilities inherent in a sunrise. The Design Group expressed a wish to continue to incorporate ideas about caring and connected communities and student empowerment through critical examination of the hidden curriculum in a school symbol. In addition, the group will search for the words, concepts, and actions that will drive the integration of academic and vocational outcomes.

Summary

The desired learner outcomes for New Designs for the Comprehensive High School should serve as intellectually and morally sound statements of the purposes of schooling for the important stakeholders of the comprehensive high school. Learner outcomes should: (a) be described in no more than one-half of a standard printed page in order to have a clear focus and provide direction to educators; (b) focus on the customers of the school—students and communities are important customers to consider; (c) survive tests from the stakeholders—the goals of *America 2000* currently offer a test of political reality; (d) represent balanced attention to all areas of human talent and development—the academic and vocational outcomes should be integrated to indicate that both are important for functioning in today's complex society; (e) involve reaching for a meaning of educational excellence that provides challenge and opportunity, perhaps beyond our present grasp; and (f) convey the belief that they represent goals for *all* students who will be expected to pass through the graduation arch possessing more proficiency.

At this stage of the design process, the Design Group has adopted the secondary outcomes that were developed by the Minnesota Board of Education, recognizing that the list is more timid than the Design Group would like and the aesthetic representations are not as deliberate as our school signatures would suggest. However, it was agreed that the following list is a solid beginning:

In order to lead productive fulfilling lives in a complex and changing society and to continue learning:

> *The graduate shall demonstrate the knowledge, skills, and attitudes essential to:* (a) communicate with words, numbers, visuals, symbols and sounds; (b) think and solve problems to meet personal, social, and academic needs; (c) contribute as a citizen in local, state, national, and global communities; (d) understand diversity and the interdependence of people; (e) work cooperatively in groups and independently; (f) develop physical and emotional well-being; and (g) contribute to the economic well-being of society.

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APPENDIX D

Learning Process: Interaction of Curriculum, Instruction, and Assessment in New Designs for the Comprehensive High School

LEARNING PROCESS: INTERACTION OF CURRICULUM, INSTRUCTION, AND ASSESSMENT IN NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

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LEARNING PROCESS: INTERACTION OF CURRICULUM, INSTRUCTION, AND ASSESSMENT IN NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

Any design for a comprehensive high school must address learning processes from the perspective that the future needs of all students must be met. Although students have different goals, different learning styles, different backgrounds, and different personalities, they all must acquire the knowledge, skills, and abilities that will allow them to be successful in today's world. Currently, the comprehensive high school is under attack for failing to provide an adequate education for students. Some of those criticisms may be justified. In the past, students were expected to learn facts and develop skills, many of which could only be applied very narrowly to specific situations. In the future it will not be as necessary for students to acquire an inventory of facts—after all, facts can be obtained from a data base. In the future, the acquisition of skills and abilities will not be limited to job specific requirements. Today's rapidly changing world requires that students learn to think and to reason, to be flexible and tolerant, and to develop and skills abilities that will allow them to grow and change as the world changes.

In order to meet the needs of today's students, schools will need to review the educational processes that are currently in place. They will need to move from the present system into a future system that meets the needs of today's students. In so doing, there are several issues that need to be addressed. As this new process is developed, careful consideration must be given to all aspects of education, including desired learner outcomes, appropriate learning processes, workable organizational structures, well-managed funding systems, and community and business relationships.

This paper, the third in a series of research and synthesis papers for New Design for the Comprehensive High School, deals specifically with the design of the learning process. Close attention is paid to the development of curriculum, instructional, and assessment processes—the triad of the learning process. Although these three topics will be discussed separately, they are intertwined. Careful and thoughtful consideration must be given to the appropriate alignment of these three parts

Curriculum

Curriculum theorists, according to Portelli (1987), "have traditionally tried to clarify the concept of *curriculum* by proceeding from a review of extant definitions of curriculum to definitions of their own" (p. 354). The first part of this section on curriculum will follow that same format. Initially, in an attempt to clarify the concept of curriculum, several definitions of curriculum will be provided and discussed. In addition, the external and internal forces affecting the adoption of a curriculum will be presented. Next, the conceptions of curriculum as defined by several authors will be contrasted and compared. Finally, based on the above discussion, several curriculum definition questions and issues will be raised for further debate.

The second part of this section on curriculum will provide additional curriculum recommendations gathered from several sources including the National Commission on Excellence in Education (1983); Goodlad (1984); Boyer (1983); Sizer (1984); *America 2000* (U.S. Department of Education, 1991); the Secretary's Commission on Achieving Necessary Skills (1991); and Beck, Copa, and Pease (1991). These sources each supply unique and valuable information that provides some clarity and insight during the curriculum debate.

Defining Curriculum

Curriculum, a term readily used by those who have an interest in the educational system, can be defined in several different ways. The following paragraphs will compare some of those definitions in an attempt to identify consistent and/or prevalent components that can be used to provide a timely definition for the term curriculum. The first two definitions are fairly traditional, probably based on the Ralph Tyler rationale first introduced in 1949; the last two belong to the Reconceptualists. According to Pinar (1988), the Reconceptualists moved the field of curriculum from a practice-oriented field to a theoretical, research-oriented field.

The more traditional practice-oriented definitions are from Beauchamp (1975) and Taba (1962). The first definition, provided by Beauchamp identifies the following three ways in which the term curriculum is used: (a) it is a "written document which may contain many ingredients, but basically it is a plan for the education of pupils during their enrollment in a given school" (p. 7); (b) it is used as a way to refer to a curriculum system as a sub-system of schooling—the system "within which decisions are made about what the curriculum will be and how it will be implemented" (p. 7); and (c) it identifies a field of study.

A second definition, provided by Taba states that all curricula are composed of the following elements: (a) a statement of aims and specific objectives; (b) some indication of the selection and organization of content; (c) an implication or manifestation for certain patterns of teaching and learning; and, finally, (d) a "program for evaluation of the outcomes" (p. 10).

The definitions representative of the Reconceptualists are from Doll (1988) and Macdonald (1988). Doll defines curriculum "not as the preset order which precedes instruction, but as the process we engage in when we teach and learn with our students" (p. 130). He believes this definition allows teachers to see truth and objectivity from within the system. Macdonald believes the curriculum plan exists in four relationships—persons to subject matter, subject matter to subject matter, society to subject matter and persons to society. Some of the design guidelines for those relationships include a curriculum that is related to needs, interests, past experiences, and capabilities of persons, and which is organized so that "its meaning for the everyday living of people is apparent" and "cognitive and affective relationships within and between usually disparate areas are apparent" (p. 169). In addition, Macdonald believes the importance of the hidden curriculum cannot be overestimated. He feels that the move to return to the basics is a turning away from the hidden curriculum.

The hidden curriculum, according to Macdonald, contains rules that may be changed be preference. He defines those rules as those which "constitute basic boundaries that can be varied if the system or cultural milieu is to retain its integrity and function" (p. 170). Rules against cheating, rules for using the bathroom, and rules that control tardiness all fall within the realm of the hidden curriculum. Macdonald believes these hidden curriculum rules, which frequently affect our perspectives, values, attitudes and morals, should be "brought into everyone's awareness" (p. 170), be made cognitively accessible through analysis and discussion, and be moved into the realm of preference rules. Currently, according to Macdonald:

> . . . the structures are hidden in the sense that their full intent in relation to what constitutes their existence is not revealed in their function. Thus, to many school people and students they seem "natural" rather than arbitrary value commitments. (p. 171)

Portelli (1987), in a discussion of the definition of curriculum, comments that the major definitions of curriculum can be placed in one of the following categories: "(a) curriculum defined in terms of content; (b) curriculum defined in terms of experiences; and (c) curriculum defined in terms of a plan" (p. 357). Curriculum as content recognizes curriculum as a course of studies which students should be taught. William Bennet's curriculum requirements for James Madison High School fall into this category. Curriculum defined in terms of experiences recognizes that all the experiences students have in school are part of the curriculum for that student. Finally, curriculum can be defined as a plan for learning. Although each of these definitions has faults, each provides insight into the concept of curriculum.

Before discussing the elements that are incorporated into those definitions, it appears prudent to consider the forces affecting the adoption of curriculum, the conceptions or orientations of curriculum and the reasons for the different definitions. Each of these ideas will be introduced in the following sections.

Forces Affecting Curriculum

First of all, what forces, external and internal, affect the adoption of a curriculum? Discussions by futurists, reviews of national reports and studies (Phi Delta Kappa, 1983), and a review of current social trends provides an extensive list of forces. The following list of ten forces represent many of the areas discussed in the above sources.

1. Changing family patterns. Current and future characteristics of families include an increase in single parent homes, an increase in women leaving the home to work, and an increased number of children in latch-key homes.

2. Shifts in the labor force. The make-up of the labor force will continue to change as more women become employed and as the minority population increases. In addition, increase in the number of elderly and decrease in the number of youth available for employment will affect the make-up of the labor force.

3. Expanded role of technology. The use of technology will continue to expand, requiring moral and legal choices as labor intensive manufacturing jobs are eliminated and replaced by jobs which require sophisticated technical knowledge.

4. Changing demands of jobs. The shift to an information and service-based economy and the likelihood that workers will need to shift jobs frequently will create new demands on education.

5. Increased interdependence of people. The shrinking of the world through rapid world-wide transportation and advanced technology has created a closer relationship among people. Respect and understanding of diverse cultural backgrounds are essential.

6. Changing social norms and value structures. The liberalized social norms and values and society's demand that schools assume traditional family and church roles causes changes in education.

7. World wide competition and markets. The need for the United States to compete in a world market demands that the nation's educational system improve its standing in comparison to other nations. International markets require a greater knowledge and understanding about the citizens of other countries. The United States is operating in a world economy.

8. Rapid growth of knowledge. Knowledge is currently expanding at a phenomenal rate.

9. Ecological concerns. Pollution and damage to the environment demand attention from policymakers, educators, and citizens.

10. Growing demand for an improved educational system. Demands for an improved educational system are reflected in the calls for national testing, teacher accountability, and the move to transdisciplinary or interdisciplinary education.

The above list of forces affects both the curriculum itself and the definition of the term *curriculum*. What used to be a simple process for identifying specific subject area content has become a broad and complex process for curriculum development. The term curriculum can no longer be equated to subject matter or discipline. Curriculum has to be defined extensively enough to encompass the changes society demands in education.

Conceptions or Orientations of Curriculum

In addition to developing a definition for the term *curriculum*, curriculum theorists discuss and identify the various conceptions or orientations of curriculum. According to McNeil (1990), "proponents of each conception have different ideas about what should be taught, to whom, when and how" (p. 1). McNeil divides the conceptions or orientations of curriculum into four major categories: humanistic, social reconstructionist, technological, and academic. He defines each of the categories as follows:

1. Humanistic—"the curriculum should provide personally satisfying experiences for each person. The new humanists are self-actualizers, who view curriculum as a liberating process that can meet the need for growth and personal integrity" (p. 1). Humanists believe subject matter "must be brought to life, taught in a way that demonstrates its relevance to the learner" (p. 4).

2. Social Reconstructionists—the curriculum should "stress societal needs over individual differences" (p. 1). Social reconstructionists believe that learning must be real, learners must act on the problem and they must form a "coherent system of values" (p. 33).

3. Technologists—the curriculum must attain its "intended objectives. Technologists focus on the "effectiveness of programs, methods, and materials in the achievement of specified ends or purposes" (p. 51).

4. Academic Approach—the curriculum is seen as "the vehicle by which learners are introduced to subject matter disciplines and organized fields of study" (p. 1). Illustrative academic subjects include the following: English, the arts, mathematics, science, social studies and foreign language.

Other theorists use somewhat different categories. Williams, Stockton and Kimpston (in press) identify eight categories: (a) behaviorism—learning is behavior to be conditioned; (b) educational technology—emphasizes specification of objectives and evaluation of units of performance; (c) social adaptation—adapting learner to meet needs of society; (d) academic rationalism—enculturing individuals into society; (e) humanism—provide personally satisfying experiences; (f) social reconstruction—leaner can change society; (g) liberation - emancipation of learner through teacher and student dialogue; and (h) transpersonal—cross disciplinary or multi-disciplinary approach to freedom based on openness and wholeness.

Eisner and Vallance (1974) identify five conceptions or orientations of curriculum. They include: (a) academic rationalism—found in the established disciplines; (b) development of cognitive processes—focus on the how rather than the what; (c) curriculum as technology—the packaging and presentation of material is most important; (d) self-actualization—help the learner discover him/herself; and (e) social reconstruction-relevant—learners identify social issues of the day. Brandt (1988) modifies the Eisner and Vallance conceptions as he develops the following six categories: cognitive processes, self-actualization, social participation, structure of knowledge, academic rationalist and utilitarian. And, finally, to conclude this look at curriculum orientations or perspectives, Copa (1992), in a recent analysis, reports that the alternative conceptions or approaches to curriculum could be grouped into five major curriculum perspectives which he labeled: (a) structure of disciplines; (b) technology; (c) social reconstruction; (d) personal meaning; and (e) cognitive process.

The conceptions of curriculum, as defined by the above curriculum theorists, "reflect competing notions about the role of schools in society and differing perceptions of the goals, organizations and content of schooling" (Brandt, 1988, p. 4). However, these conceptions do not always exist in their pure form. They may be combined to provide a more realistic view of curriculum. For example, a combination of McNeil's technology and academic rationalism is probably most typical of curriculum in schools today. Other combinations of conceptions are equally plausible.

Reasons for Different Definitions

Portelli (1987) reports that various definitions for the term *curriculum* result from (a) an attempt to clarify the nature of the concept, and (b) a belief that "clarifying the term curriculum is considered crucial" to the "design, justification, application, and evaluation of a particular curriculum..." (p. 357). Portelli raises the following questions which could also be addressed during the search for a definitive definition:

1. Is curriculum distinct from instruction?

2. What is the relation between curriculum and the plan, objectives, content, method and evaluation?

3. Is the notion curriculum essential to schooling? Does teaching make sense without the notion curriculum?

4. Whom should curriculums be directed toward? Who should decide curriculum matters? What justification is needed to make different curriculums acceptable? (p. 356)

In addition to Portelli's questions, the following issues need to be addressed:

1. What consistent or prevalent components should be included in a definition for curriculum?

2. How do the orientations or conceptualizations affect the development of the curriculum?

Curriculum Defined

With the above questions acting as guidelines and the definitions, forces, and conceptions providing a framework, the following definition of curriculum seems most appropriate for the purpose of developing new designs for the comprehensive high school: Curriculum is a selected body of knowledge and experience that is acquired and applied by a learner during the instructional process and purposeful and useful to the learner in real life situations. It is cross-disciplinary or multi-disciplinary and requires an open or whole process of instruction. The elements of this definition can be explained in the following manner. First of all, it recognizes that there is a body of organized knowledge contained in the curriculum—the structure of the knowledge is important. Second, that body of knowledge is not all inclusive; obviously students can't learn all there is to know. It is, instead, knowledge selected from the entire body of knowledge. Third, it recognizes that knowledge crosses disciplines and is not subject specific.

And, finally, it identifies the need for a whole and integrated instructional process that doesn't create a piecemeal, segregated educational menu.

The broad societal demands and forces provide the base for an integrated curriculum that recognizes wholeness and comprehensive experience. In addition, the integrated curriculum meets the need to have the knowledge and experience acquired through education connect to the integrated experiences in real life situations. Changes in family structure, labor force, technology, jobs, norms and values, knowledge, and ecology demand that the curriculum not be separated into separate subject areas with a single emphasis. Integration, wholeness, openness, along with a positive attitude toward other people, cultures, social groups and nature are essential to meet the demands of today's society.

As Williams, Stockton, and Kimpston point out, "there is obviously too much knowledge to be mastered by any individual, therefore the selection and organization of knowledge must be based on other than total mastery of all that is known" (p. 9). A definition of curriculum must recognize the fact that students cannot learn everything. In addition, the definition must reflect current societal forces and consider specific orientations to curriculum. The definition advanced in this paper moves toward meeting those demands and provides a direction for curriculum decisions.

Curriculum Recommendations

In response to some of the above questions, and to provide further clarification for the curriculum debate, information from research reports and national studies needs to be considered. This section of this report includes curriculum recommendations gleaned from *A Nation at Risk* (National Commission on Excellence in Education, 1983), *A Place Called School* (Goodlad, 1984), *Horace's Compromise* (Sizer, 1984), *High School* (Boyer, 1983), *America 2,000* (U.S. Department of Education, 1991), *What Work Requires of Schools* (Secretary's Commission on Achieving Necessary Skills, 1991), and "An Uncommon Education: Collaborations Between Vocational and Academic Teachers" (Beck, Copa, & Pease, 1991). Each of these sources provides valuable insights for the curriculum discussion.

In 1983, the National Commission on Excellence in Education issued a report which can now be considered the driving force behind the current demand for school reform. This report, entitled *A Nation at Risk*, found that the declines in educational performance were "in large part the result of disturbing inadequacies in the way the educational process itself is often conducted" (p. 18). The Commission made several recommendations that needed to be implemented to, according to them, "promise lasting reform" (p. 23). Some of those recommendations relate specifically to the high school curriculum. For example, the report emphasizes that "the variety of student aspirations, abilities, and preparations requires that appropriate content be available to satisfy diverse needs" (p. 24). Although it defines the minimum high school curriculum using an academic approach, i.e., "(a) four years of English; (b) three years of mathematics; (c) three years of science; (d) three years of social studies; and (e) one-half year of computer science" (p. 24), it also recognizes that to meet diverse student needs "the high school curriculum also should provide students with programs requiring rigorous effort in subjects that advance students' personal, educational, and occupational goals, such as the fine and performing arts and vocational education" (p. 26). The Commission's recommendations need to be considered during the curriculum discussion.

Soon after *A Nation at Risk* was released, Goodlad, (1984), reported that the trend at the national, state, and local levels was toward "greater specification of the subject requirements for high school graduation" (p. 285), specifically more years of science and math. However, he believed that without changes in pedagogy, the dropout rate would increase as a result of the additional requirements. He argued against increased requirements and, instead, recommended "better balance among fields of study and greater commonness of study in these fields" (p. 286).

He felt that the "five fingers of human knowledge and organized experience"—mathematics and science, literature and language, society and social studies, the arts, and the vocations—should be included in the common studies. Goodlad preferred the following balance in a student's program: eighteen percent in mathematics and science, eighteen percent in literature and language, fifteen percent in society and social studies, fifteen percent in the arts, fifteen percent in the vocations, and ten percent in physical education. The remaining ten percent would be for individual choice—Goodlad called it the sixth domain and predicted that this domain may be the "most significant of all in determining life-long commitments and accomplishments" (p. 287).

Although instruction in this sixth domain could be provided outside of the school setting, it could also be obtained within the school. Goodlad believed there could be a "limited array of electives" (p. 287) offered; however, at least two-thirds of all programs would be common. Although Goodlad identified the subjects in the core, it is interesting to note that he argued against a common set of topics. Instead he proposed a common set of concepts, principles, skills, and ways of knowing represented in the core curriculum. It would appear that these concepts, principles, and skills could be identified as learner outcomes.

Even though Goodlad endorses the common core concept he does raise several interesting concerns surrounding his recommendation. For example, if curriculum continues to be defined in a discipline specific manner, one concern is that students would be limited in their degree of choice. For example, a student gifted in mathematics or the arts would be restricted in the pursuit of those areas as a result of curricular requirements in other areas. If, however, outcomes rather than disciplines defined the curriculum, Goodlad's concern could be somewhat alleviated. In addition to the above example, Goodlad also recognizes that affluent families would be able to provide extended opportunities beyond those available to poor families.

When Sizer discussed the current high school curriculum, he reported that "what is supposed to be picked up is remarkably consistent among all sorts of high schools" (p. 80). Schools mandate three of every five subjects and the mandates are usually in the areas of English, social studies, mathematics, science and physical education. He, like Goodlad, predicted that the time allotted to science and mathematics is on the increase. Sizer argued that the subjects are not clearly defined nor is there any rationale for them; subject titles cover a multitude of things. Sizer lamented the fact that "covering within subjects is the key priority" (p. 81). He expressed concern about the integration of curriculum,

> If some imaginative teacher makes a proposal to force the marriage of, say, mathematics and physics or to require some culminating challenges to students to use several subjects in the solution of a complex problem, and if this proposal will take `time' away from other things, opposition is usually phrased in terms of what may be thus forgone. (p. 81)

Finally, Sizer commented about the lack of connection between stated goals and the goals inherent in schools. He found that there was a real discrepancy between goals such as "self-realization and mental and physical growth" and actual practice in school learning.

Sizer concluded his discussion about curriculum with the following, somewhat cynical, comments: "the students are happy taking subjects," "the parents are happy, because that's what they did in high school," "the rituals, the most important of which is graduation, remain intact," "the adolescents are supervised, safely and constructively most of the time," and "they are off the labor market."

Reacting to the dilemma of Horace, and others like him, Sizer encouraged several school restructuring activities. These school restructuring activities were facilitated through Sizer's Coalition of Essential Schools. Some of these schools, experimenting with various methods for educational improvement, have integrated their curriculum and practiced site-based decision making. Although schools are encouraged by Sizer to develop unique instructional programs, these coalition schools would act as lighthouses for many future school restructuring efforts.

Boyer (1983), like Sizer, concerned about the current education systems, suggested "an agenda for action." His agenda included the following recommendation: "School goals should focus on mastery of language, on a core of common learning, on preparation for work and further education, and on community and civic service" (p. 301). This goal has obvious implications for curriculum and Boyer spells those out in some detail. His recommendations include: (a) the need for skill in written and oral English; (b) the need to acquire a core of common learning which includes "strengthening the traditional courses in literature, history, mathematics and science, and an emphasis on foreign language, the arts, civics, non-Western studies, technology, the meaning of work and the importance of health" (p. 303); (c) the need to provide a transition from school to work and further education; and (d) the need to help students meet social and civic obligations through a service requirement.

America 2000 (U.S. Department of Education, 1991), outlines a plan to move toward the six national goals that were adopted by the president and the governors. These national goals have several implications for the high school curriculum. Goal three requires that students who leave grades four, eight, and twelve must have demonstrated competency in the core subjects of English, mathematics, science, history, and geography, which suggests an academic curriculum orientation. It is interesting to note that when the *Nation at Risk* report was issued, the high school requirements were stated in terms of time requirements. Now, with *America 2000*, students are not given time requirements; instead, they are required to demonstrate competency. This requirement provides added flexibility to the curriculum as it is entirely possible for the concepts to be taught in an interdisciplinary class or for students to acquire the knowledge outside the classroom.

Other areas mentioned in the national goals and which need to be addressed through the curriculum are preparation for responsible citizenship and productive employment in a global economy. The "Accountability Package" that will be used to measure and compare results requires that standards be developed. These standards will define what "young Americans need to know and be able to do if they are to live and work successfully in today's world" (p. 21). The need to be prepared for further employment and/or work is a focus of the *America 2000* report and will need to be used as a guideline for curriculum development in the future.

Beck, Copa, and Pease (1991) studied another approach for looking at curriculum. They reported on the undertakings of several teachers in two separate high schools to integrate vocational and academic curriculum. These teachers based their decisions "on their perceptions of the high school goals, the students' needs, and their experience with interdisciplinary teaching" (p. 2). Beck, Copa, and Pease found that the interdisciplinary curriculums used by those teachers were developed using a variety of theoretical approaches (approaches originally described by Plihal, Johnson, Bentley, Morgaine, & Liang, 1992). The approaches included: (a) reinforced curriculum—using supplemental materials to "remediate or enrich the content of an existing class;" (b) correlated curriculum—teachers making connections between subjects to encourage understanding; (c) fused curriculum—new subject created from two or more subjects; (d) broad field curriculum—builds on several content areas that relate to a specific or common goal; and (e) core curriculum—which organizes learning according to identified problems. These integrated approaches to curriculum give students the opportunity to understand the connectedness between the concepts which, in the past, have been taught as discrete, unrelated subject areas.

One final document which provides clear implications for curriculum is the report of the Secretary's Commission on Achieving Necessary Skills, (SCANS, 1991). This report identifies three foundations skills and five competencies that all students need as they go to work or go on to school. The five competencies include abilities to: (a) identify, organize, plan and allocate resources; (b) work with others; (c) acquire and use information; (d) understand complex systems; and (e) work with a variety of technologies. The foundations are basic skills, thinking skills, and personal qualities. The authors of the report request that the competencies and foundations be injected "into every nook and cranny of the school curriculum" (p. ix). According to the report, students currently see little connection between what they do in school and what they will do to earn a living. The authors of this report believe that "teachers and schools must begin early to help students see the relationships between what they study and its applications in real-world contexts" (p. 19). To do that, they recommend that learning be placed within real environments so that students can apply what they have learned in the abstract.

Based on this review of curriculum recommendations, the following conclusions seem apparent. First, there has been movement from a time-based curriculum requirement to a requirement to demonstrate competence. Second, the curriculum must meet diverse student needs in personal, educational, and occupational areas. Third, a diversity in pedagogy rather than additional requirements is required to address student needs. Fourth, a balanced curriculum and commonness of study may be necessary. Fifth, a concept or learner outcome based curriculum could use an interdisciplinary approach to meet student needs. And, finally, students need to understand the relationship between what they learn in school and what they will need to know to live well.

Conclusions About Curriculum

Researchers who are interested in theory usually focus on curriculum theorists' curriculum definitions, curriculum development, and curriculum orientations or conceptions. In addition, research has provided several recommendations for curriculum development. The following statements summarize some of that information.

- Several definitions for the term curriculum have been developed. The traditional definitions recognize curriculum as a practice-oriented field. The Reconceptualists identify curriculum as a theoretical, research- oriented field.

- Some of the external and internal forces affecting the adoption of a curriculum include changing family patterns, shifts in the labor force, expanded role of technology, changing demands of jobs, increased interdependence of people, changing social norms and value structure, world wide competition and markets, rapid growth of knowledge, ecological concerns, and growing demand for an improved educational system.

- The conceptions or approaches to curriculum can be grouped into five major curriculum perspectives: structure of disciplines, technology, social reconstruction, personal meaning, and cognitive process.

- The following definition of curriculum seems a good starting place: Curriculum is a selected body of knowledge and experience that is acquired and applied by a learner during the instructional process and is purposeful and useful to the learner in real life situations. It is cross-disciplinary or multidisciplinary and requires an open or whole process of instruction.

- The current curriculum discussion centers around the demonstration of learner competence rather than the accumulation of time spent on a subject.

- The curriculum must meet diverse student needs in personal, educational and occupational areas.

- Changes in pedagogy are more important than simply increasing or adding requirements.

- A common core of concepts, principles, skills, and ways of knowing should be represented in the curriculum.

- The common core can be taught using an interdisciplinary approach. These integrated approaches allow students to understand the connectedness between the concepts that in the past have been taught as discrete subjects.

- Students need to recognize the connection between the learning they do in school and its relationship to what they will do to live well.

Instruction

An outcome based educational system usually recommends the alignment of three basic elements: learner outcomes, assessment and feedback, and instruction by the teacher. The Secretary's Commission on Achieving Necessary Skills (SCANS) states that educators, i.e., teachers, have to instill in students the perspective on results that the SCANS skills demand. *America 2000* discusses the establishment of Governors' Academies for Teachers "so that teachers of the five core subjects in every state will be ready to help their students" (p. 23) reach established standards and pass achievement tests. In each of these instances the focus is on the teacher to provide the instruction. The teacher is charged with the mission of transferring the information to the student. The student's needs or, better yet, the learner's needs (the difference will be explained later) are often slighted during the discussions that surround the teacher's role in the restructuring of the educational system.

The focus of this paper will be on the learner and the need for knowledge and skills to become part of the learner's possessions. In the following examples, the learner will be the acting party, acquiring and owning information—the teacher will be a facilitator of the learning. Adler, in *Paideia Proposal*, concluded that "all genuine learning is active, not passive. It involves the use of the mind, not just the memory. It is a process of discovery in which the student is the main agent, not the teacher" (p. 50). Goodlad reports:

> The modal classroom configurations which we observed looked like this: the teacher explaining or lecturing to the total class or a single student, occasionally asking questions requiring factual answers; the teacher, when not lecturing, observing or monitoring students working individually at their desks; students listening or appearing to listen to the teacher and occasionally responding to the teacher's questions, students working individually at their desks on reading or writing assignments; and all with little emotion, from interpersonal warmth to expressions of hostility. (p. 230)

Goodlad goes on to report that students are not engaged with knowledge or using their full range of intellectual abilities. The comments of Adler and Goodlad demonstrate the fact that frequently the teacher has been the instructor, the presenter of information; the student a listener, passively receiving the instruction. The term learner connotes active acquisition of knowledge. Therefore, the following examples will focus on an active acquisition of knowledge, and the term *learner* rather than *student* will be used.

Instructional Processes

Throughout the discussion in this section, the student will be the focal point. The teacher and the instructional processes will be addressed by looking at the needs of the student. Several instructional processes congruent with this philosophy will be introduced and briefly discussed. These processes include learning styles, cooperative learning, brain-based learning, multiple intelligences, contextual learning, experiential learning, higher-order thinking, and thoughtful learning. Although these learning processes have elements in common with one another, each has unique characteristics, which need to be addressed separately.

Learning Styles

According to Dunn and Griggs (1988) the educational system is "ineffective because it does not respond to the many different ways in which healthy, normal, and motivated students absorb, process, and retain difficult information and skills" (p. 2). Learning styles are defined as a "biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrible for others" (p. 3). Learners within a classroom have a variety of learning styles. Several learning styles instruments such as the Myers-Briggs Type Indicator, the Kolb Learning Styles Inventory, the Grasha-Reichmann Learning Styles Questionnaire and the Inventory of Learning Processes can be used to assess the different learning styles of students.

The 4MAT System, developed by McCarthy (1990), is an example of a process that can be used accommodate learning styles. It is an eight-step cycle for instruction that is based on the major premise that people have hemispheric processing preferences and that instructional strategies can be developed to teach to those preferences. McCarthy states that this learner- focused model adapts curriculum and instruction to the needs of students. McCarthy's system is one of many models that focus on differences in individual learning styles.

Several years ago, Jacobs and Fuhrmann (cited in Kirrane, 1988) developed companion learner-trainer style inventories. According to them, attention to learning styles and matching these styles to trainer/instructor behaviors would enhance the likelihood of learning.

As is obvious from the previous information, there have been many learning style theories. In a recent interview reported in *Educational Leadership* (Brandt, 1990), Guild recommends that teachers use several different learning style models to meet student needs.

Cooperative Learning

According to Johnson, Johnson, and Holubec (1986), cooperative learning is an old idea that needs to be included in present day education. They report that throughout history, educators have used cooperative learning groups to reach educational goals. Advocates of cooperative learning have, in the past, included Colonel Francis Parker, John Dewey, and, more recently, Robert Slavin and William Glasser. Cooperative learning is described by Johnson and Johnson as learning situations where "there is a positive interdependence among students' goal attainments; where students perceive that they can reach their learning goals, if and only if, the other students in the learning group also reach their goals" (p. 4); and which allows learners to actively learn knowledge and skills in a "realistic setting of having to work cooperatively with their classmates" (p. 11). They warn that cooperative learning is not simply placing students near one another; it requires a cooperative goal structure that leads to a promotive pattern among students. Cooperative learning experiences "tend to promote higher achievement than do competitive and individualistic learning experiences" (p. 23-24).

Brain-Based Learning

In *Teaching and the Human Brain*, Caine and Caine (1991) comment that "brain research establishes and confirms that multiple complex and concrete experiences are essential for meaningful learning and teaching" (p. 5). They believe that students learn from their entire ongoing experience with every current event, knowledge, or behavior being linked or connected to past learned or stored information. They suggest that learners must be exposed to content and context—immersed in learning, engaged in talking, listening, reading, viewing, acting, and valuing. According to Caine and Caine, learners can acquire two types of knowledge—surface knowledge and meaningful knowledge. The former is traditional education; the latter is necessary for the 21st century. They report that brain-based learning involves two components: (1) designing and orchestrating lifelike, enriching, and appropriate experiences for learners, and (2) ensuring that students process experience in such a way as to increase the extraction of meaning.

They give several examples of brain-based teaching including the Highstown High School humanities program with its integrated curriculum, Susan Kovalik's group of over forty-five schools that have implemented an integrated thematic approach, and the Colorado School of Mines integration of humanities into an engineering course.

Multiple Intelligences

Gardner and Hatch (1989) have written that individuals use seven fairly independent forms of information processing either alone or in combination with each other. These seven forms of thinking or intelligences—logical mathematical, linguistic, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal—can be used as a basis for learning and assessing that learning. Gardner and Hatch report that "demands for assessments that are intelligence fair, are based on culturally valued activities, and take place within a familiar context naturally lead to an approach that blurs the distinctions between curriculum and assessment" (p. 6). Although the research in this area is not conclusive, the authors conclude that "the goal of detecting distinctive human strengths, and using them as a basis for engagement and learning, may prove to be worthwhile, irrespective of the scientific fate of the theory" (p. 9).

Contextual Learning

The SCANS report concludes that the most effective way of learning the three foundation skills and the five competencies needed by all students is by teaching those skills in context. According to a recent article in *Vocational Education Weekly* (Hudelson (Ed.), 1991), that means "placing learning objectives within real environments rather than first insisting that students learn in the abstract what they will be expected to apply" (p. 4). The Commission mentions three principles that guide contextual learning:

1. Students do not need to learn basic skills before they learn problem-solving skills. The two go together. They are not sequential but mutually reinforcing;

2. Learning should be reoriented away from mere mastery of information and toward encouraging students to recognize and solve problems; and

3. Real know-how—foundation and competencies—cannot be taught in isolation; students need practice in application of these skills.

SCANS gives several examples of contextual learning, including reading and math that are more concrete when embedded in systems or technological problems and personal characteristics are developed in team-work efforts.

Experiential Learning

"Experiential learning theory provides a model of a learning process that is consistent with the structure of human cognition and the stages of human growth and development" according to Kolb (1976, p. 2). The name, experiential learning, reflects the fact that experience plays an important role in the learning process. Kolb reports that the model describes the experiential learning cycle in four stages: (a) concrete experience; (b) observations and reflections; (c) formation of abstract concepts and generalizations; and (d) testing implications of concepts in new situations. The core or base for this model is that experience is translated into concepts, which, in turn, guide new experiences. Using this model, the learner moves from the actor to observer, from involvement to analytic detachment, and from the concrete to abstract.

Apprenticeships are one example of experiential learning. They allow learners to first experience the workplace and then connect those experiences to classroom concepts and generalizations. There is renewed interest by policy makers, business groups, and academic experts in the apprenticeship experience as a way to improve education (Harp, 1991). Advocates of experiential learning would see this renewed interest in a positive light.

Higher Order Thinking

Resnick (1987) reports that only in the last sixty years have schools identified higher order thinking skills as a goal for all students. The following list contains some key features of higher order thinking: nonalgorithmic, complex, multiple solutions, multiple criteria, uncertainty, self-regulation, imposing meaning, and effortful. According to Resnick, higher order thinking is currently taught in courses designed to teach reasoning and problem-solving as general skills applicable in many settings, and in discipline specific classes, such as mathematics and science. Resnick reports that "cognitive research shows the intimate relationship of subject matter knowledge to the reasoning process" (p. 49). She recommends that "we need both practical experimentation in schools and more controlled instructional experimentation in laboratories to discover ways of incorporating our new understanding of the knowledge reasoning connection into instruction" (p. 49).

According to Resnick, there are a variety of current programs to teach higher order thinking, reasoning, and problem solving. Some of those programs approach higher order thinking as a general problem solving skill, unique and separate from any discipline area. According to Resnick, research indicates students taught using this approach tend to be more fluent in producing ideas. Other programs teach higher order thinking and problem solving in conjunction with a particular discipline. Resnick reports research indicates these programs are successful at raising grade point averages and are enthusiastically accepted by students. In addition to the two separate approaches, there are a number of programs combining the two approaches. Strategies for teaching reading and studying are typical of the combined approaches. In summary, Resnick believes the evidence to support teaching thinking skills as a separate topic is weaker than the evidence to support embedding instruction in thinking skills into the curriculum.

Thoughtful Learning

Schrag (1987) questions whether it is possible to teach higher order thinking in the high school. He makes the case that there are many barriers to that approach, including teachers who lack the skill to teach higher order thinking, and students who resist thinking and slide into less demanding tasks. He recommends that rather than focus on "thinking skills," the focus should be on the development of thoughtfulness. He states:

> Thoughtful people, regardless of the context in which they work, and regardless of the intelligence they possess, also share a character trait. Two dimensions are salient: reflectivity and flexibility. Good thinkers are reflective, by which I mean that they are deliberate and systematic rather than impulsive and capricious. By flexible, I mean able to see situations from different angles, thereby avoiding rigid, stereotyped responses. (p. 2)

He believes the classroom structure (i.e., the focus on discipline, correct answers, and objective tests) prevents the teaching of thoughtfulness. He recommends that thoughtfulness be taught using long blocks of time in other- than-classroom settings. According to Schrag, examples of appropriate climates would be specially developed "*junior* science laboratories, historical societies, social policy institutes, publishing houses, television stations . . ." These *junior think tanks*, as he calls them, could be focused on problems of concern to the students. The students, under the guidance of a teacher, would develop the agenda, be allowed to make mistakes, master skills or ideas as needed, work cooperatively, and produce a product. He believes this "commitment to enhancing thoughtfulness will require a different kind of educational investment" (p. 4), one which will meet the demand for problem solvers in the workplace.

Parker (1991) defines thoughtfulness as "habits of the mind that incline one to behave reflectively—to think, to construct a model of the situations which impulsiveness or avoidance are tempting" (p. 98). He describes the thoughtful classroom as one where there is in-depth study on fewer topics and defines the thoughtful curriculum as essential subject matter, spiraled across grade levels, selected and organized to encourage student engagement, and using authentic exhibitions of learning.

Conclusions About Instruction

Instructional processes used in the classroom need to address unique needs of individual students and provide an environment conducive to learning for all students. The following synopsis of some instructional processes deals with those concerns:

- There are many theories that address unique learning styles. Teachers should be capable of using several of the theories to meet the student's needs.

- Cooperative learning, rather than competitive or individualistic, allows learners to acquire knowledge and skills through the realistic setting of having to work cooperatively with classmates.

- Brain-based learning involves designing and orchestrating lifelike, enriching and appropriate experiences for learners and ensuring that students' process experience in such a was as to increase the extraction of meaning.

- The concept of multiple intelligences addresses the goal of detecting distinctive human strengths, and using them as a basis for engagement and learning.

- Contextual learning, recommended by SCANS, involves placing learning objectives within real environments.

- Experiential learning recognizes that observation and reflection on concrete experiences allows the formation of abstract concepts and generalizations that can be used as a basis for concept formation in new situations.

- Higher order thinking, identified as a goal for all students, is nonalgorithmic, complex, has multiple solutions and multiple criteria, is based on uncertainty, self-regulated, meaningful, and effortful.

- Thoughtful thinking, according to Schrag, has two dimensions: reflectivity and flexibility. Thoughtful thinking usually requires an in-depth study of a few topics in other than the typical classroom setting.

Assessment

On Tuesday, August 27, 1991, the Minneapolis Star Tribune reported under the headline *SAT Verbal Scores Hit Record Low Nationally* that

> National average scores on the Scholastic Aptitude Test (SAT) sank to an all-time low for verbal skills in 1991, continuing a six-year slide that many blame on failure of schools and families to coax students into rigorous studies. (p. 1)

These SAT test results no doubt will be used by many to prove that the American education system is in desperate need of repair. Parents, politicians, and business people may say that the SAT score, a respected method of student assessment, can be used to justify that concern. However, before jumping to that conclusion, it might be judicious to review the concept of assessment and the methods, including standardized tests, that are currently being used to assess the knowledge and learning of students. The debate which occurs during this review should include some discussion about: (a) purposes of assessment; (b) current concerns about assessment; (c) criteria which could be used to develop assessment instruments; and (d) alternative types of assessment.

Before moving into the discussion about assessment, however, a working definition for the concept of assessment should be established. The definition varies depending on the focus of those who are discussing assessment. However, in this document and throughout this discussion, the concept of assessment will be used to include any method of evaluating or measuring student performance and student understanding, establishing a *grade* for a student, or otherwise indicating student achievement. The definition includes benchmark, formative, and summative assessments. Traditional forms of assessments, such as standardized tests and achievement tests, as well as alternatives, such as portfolios, projects, and other realistic performance demonstration techniques, will be included in the concept of assessment.

Purposes of Assessment

According to Resnick and Resnick (1985), student assessments can be used in two ways to set and maintain educational standards. First, they can be used to monitor the performance of the schools, and, second, they can be used to monitor the performance of individual students. Resnick and Resnick make the argument that traditionally the standardized tests and examinations have been directed toward the first purpose rather than the second. They provide the following justifications for their positions.

Monitoring the Performance of Schools

Assessment as a monitor of performance of schools has existed since standardized tests were introduced into American schools late in the 19th century. At that time, the short answer and multiple choice questions on the test met the same type of efficiency standards that were being used by industry during that period. They were considered cost-efficient and objective, and, of particular importance, they provided comparisons of districts and schools. There are a number of reasons that those comparisons of schools have been and still are important. Resnick and Resnick (1985) report:

> The spectacular growth in the use of standardized achievement tests over the last thirty years has been partly due to demands for evaluation of various mandated and specially funded programs in the schools and partly to demands by parents and other citizens' groups--especially minorities--for information on the performance of various schools within the district. (p. 12)

The current demands for this type of reporting are evident in several reports. One example is the "Accountability Package" of the *America 2000* report (U.S. Department of Education, 1991). The package includes the establishment of world class standards, nationwide examinations, and report cards on schools. A second example of this purpose of assessment is reflected in Minnesota's outcome-based education (OBE) assessment and feedback process (Minnesota Department of Education, 1990) that suggests a need to report aggregate student data. It appears, based on these reports and others, that the demand for reporting aggregate assessment data will continue.

Monitoring the Performance of Students

Assessment as a means of monitoring student performance and understanding, which includes identifying student needs and motivating students toward improved performance, has been less effective. The current standardized tests, such as the SAT and the ACT, are not aligned with the curriculum in schools; they are not meant to be "studied for," and do not provide useful feedback for students. Resnick and Resnick (1985) believe this should be remedied—that assessment and curriculum should be aligned. They comment that

> there is reason to believe that educational systems that are marked by periodic examination for which schools deliberately prepare their student have built-in mechanisms for standards maintenance and improvement. . . . (p. 12)

They go on to report that examinations aligned with curriculum improve education in two ways. First, they exert influence on the style of teaching, and, second, they certify that the student has learned. The Minnesota OBE assessment and feedback process includes a suggestion to have a reporting plan that recognizes the need to provide teachers and students with individual student performance information. This plan based on both formative and periodic summative assessment can be used as a process for identifying needs and moving students toward improved performance.

Current Concerns About Assessment

Concerns about assessment have been voiced by educators, parents, and business people. Some of those concerns address the inadequacies of certain forms of assessment and some address the fact that assessment can be an actual barrier to education.

Currently, the concern about assessment includes talk about raising standards in education and establishing "national standards" through tests such as those being developed for the National Assessment of Educational Progress (NAEP). One example of the cry for national tests comes from *America 2000* (1991). The report states:

> [A] new nationwide examination system will be developed, based on five core subjects, tied to the "world class standards." These tests will be

> designed to foster good teaching and learning as well as to monitor student progress. (p. 21)

Wiggins (1990), Director of research for Consultants on Learning, Assessment and School Structure (CLASS), is concerned about simply raising standards. He believes that to many people, raising standards means nothing more than raising test scores. He warns that standards must refer to qualities, not quantities. High standards, according to Wiggins (1991), "are not stiffer test-result quotas but a more vigorous commitment to intellectual values upheld consistently and daily in the face of entropy, fatalism, and the occasional desire on everyone's part to not give a damn" (p. 20). He believes that demanding and getting quality means framing standards in terms of the work that we undertake and value. Therefore, he advises that less than quality work be rejected and not accepted until it is up to the established high standard. He concludes with the following mandate to educators:

> Let us have standards and measures that empower their users: through exemplars and criteria that give insight into the performances and virtues most valued by the wider society and through the requirement of quality, whatever local form it may take. (p. 24)

Resnick and Klopfer, (1989) expressed concern about the impact of testing on the teaching of thinking and reasoning. They found that tests which contain collections of unconnected questions "accord badly with the principles of learning and thinking put forward by cognitive researchers" (p. 209). They recommend the use of performance assessments (discussed later in this paper) for all school subjects if the thinking curriculum is to succeed.

There are several other concerns in addition to those stated above. For example, according to a recent National Center on Effective Secondary Education newsletter (1987), "Tests are attacked for their cultural bias or their sanctification of trivial forms of knowledge" (p. 1). Furthermore, the National Center reports that other subtle criticisms include incomplete and misleading information and the fact that half of the students will always score below average.

Although it appears that some form of national or state-mandated assessments may be required, the concern about the use of those forms of assessments needs to be addressed. Raising standards, permitting a thinking curriculum, eliminating cultural bias, providing accurate data, and allowing all students to achieve must be incorporated into the assessment process.

Criteria for Assessment

In order to adhere to Wiggins' mandate and identify the types of assessment that are most effective, we must first ask ourselves "What kind of information do we want?" The National Center on Effective Secondary Schools (1987) discusses the following criteria which can be used to answer that question:

1. Did the student succeed in meeting the educational goals?

2. What does the assessment say about how the student, teacher, or school might improve?

3. Can or should the assessment provide comparative judgments or ranking of student performance?

The National Center on Effective Secondary Schools summarizes the previous questions as accountability, improvement, and selection allocation. They report that assessments which serve one of the above purposes may not necessarily serve the others.

In addition, according to the National Center, one fundamental issue needs to be addressed during assessment: "Does the information collected represent an accurate estimate of significant knowledge or mastery?" (p. 1) They state specifically:

> Tests have been criticized especially for their failure to measure competence as expressed in "real life" situations beyond school, especially as people speak and write to one another, as they try to comprehend the written work, and as they try to solve mechanical, biological, or civic problems. (p. 1)

Currently, the Secretary's Commission on Achieving Necessary Skills (SCANS) report (1991) discusses teaching, assessing, and learning. They recognize that simply identifying competencies is not enough. They write, "Schools must teach them. Students must learn them. And, they should be assessed as part of the America 2000 agenda" (p. xxi). Although the SCANS report recommended that students be assessed by means of formal, nationally comparable assessments, they also state that less formal assessment can be made through other curriculum activities, such as "team efforts, school projects and diaries, notebooks, and records of experiments maintained in each student's portfolio" (p. 20). They are concerned about the types of assessments that will be used. According to the report:

> SCANS is convinced that most existing tests—largely pencil and paper, multiple-choice tests of short-term memory—do little to advance the cause of learning. Effective assessment techniques should support instruction and students' knowledge of their progress. (p. 29)

They also recommend that the assessment process be examined to ensure "fairness for students from different social, racial, and economic backgrounds" (p. 29), and that assessments "must be designed so that, when teachers teach and students study, both are engaged in authentic practice of valued competencies" (p. 29). And, finally, they suggest that the assessment measure "mastery of specific, learnable competencies" (p. 30) that will be used to credential students. They conclude with the thought that assessment can help improve achievement, not simply monitor it.

In summary, the following questions should be considered when developing assessments:

1. What kind of information do we want?

2. Does the information collected represent an accurate estimate of significant knowledge or mastery?

3. Does the assessment support instruction and students' knowledge of their progress?

4. Is it fair for students from different social, racial and economic backgrounds?

5. Is it designed so that both students and teachers are engaged in authentic practice of valued competencies?

6. Does it help improve achievement, not simply monitor it?

Alternative Types of Assessment

"What does a youngster do who resourcefully uses his/her mind?" Sizer (1989), director of the Coalition for Essential Schools, recommends that thought be given to that question and the following question: "What do they do to deserve our respect?" He suggests that the answers to those questions will not be subject matter, age, or class specific. However, those answers will "throw a shadow backwards;" they will provide direction in both the curriculum and assessment debate. In essence, the curriculum is developed based on the answers to Sizer's questions and assessments are used to determine whether or not the student has mastered the curriculum.

Sizer recommends that once those questions are answered, students should be required to "exhibit" their control of the material, their mastery of the material and their ability to use the material. He suggests that this 18th century Academy notion of "exhibition" or performance be used to assess youngsters. In an expansion of this concept, he suggests that ideas be expressed in more than one medium. His suggestions include draw a picture, write a definition, defend in a discussion, write a bar of music, write a play, or do a pantomime. Each of those suggestions is an "exhibition" of the understanding and the mastery of the idea.

Archbald and Newmann (1987) appear to agree with Sizer's philosophy about exhibiting performance. They ask "What forms of human accomplishment should schools cultivate?" (p. 5). They believe that once the concepts are formulated, indicators or measurements can be developed to "estimate 'how many of' and 'how well' these accomplishments have been mastered" (p. 5). The following quote develops this philosophy:

> A useful and valid assessment system must not only provide information about the actual type and quality of competence that students have achieved; it must also base its assessments on achievement considered significant, meaningful, and authentic. (p. 5)

Newmann (1990) described his vision of authentic student achievement. Authentic achievement requires that students produce knowledge that has value beyond proving their competence in school. He suggests that mastery as currently demonstrated on tests is unlikely to reach that goal. Instead, he suggests that "long-term projects which result in discourse, things, and performances of interest to students, their peers and the public at large" (p. 4) would be better ways of expressing achievement. According to Newmann, authentic achievement has value for two reasons: (a) participation in authentic tasks is a motivator for students because it has value beyond school; and (b) it allows the use of higher order thinking and problem-solving capacities.

Criteria for Authentic Assessment

Archbald and Newmann (1987) suggest four criteria be used by schools for assessment of authentic academic achievement. These include: (a) "academic learning should involve a formal, disciplined study of knowledge" (p. 5); (b) "the completion of the task should have aesthetic or utilitarian value apart from determining the competence of the learner" (p. 6); (c) "assessment should be conducted in ways that honor the integration of knowledge" (p. 6); and (d) diverse forms of intellectual accomplishment should be acknowledged. They recognize the difficulties inherent in developing these assessments.

Examples of Authentic Assessment

The National Center on Effective Secondary Schools (1987) provides the following examples of alternatives to standardized tests which apply the authentic assessment philosophy:

1. Walden High School, Racine, Wisconsin, uses a "Rite of Passage Experience" which requires that seniors "demonstrate mastery in fifteen areas of knowledge and competence by completing a portfolio, project, and fifteen presentations" (p. 8) before a committee. The portfolio contains summarized descriptions of accomplishment, samples of writing, photographs, formal records and diaries, as well as other evidence of academic performance. The project includes an oral presentation of a research paper. In addition to the presentations required for the portfolio and the project, six additional presentations are required in the following subject areas: mathematics, American government, personal proficiency, geography, English.

2. Learning Unlimited, an Indianapolis school-within-a-school, uses a learning contract as the basis for evaluation. The learning contract contains a set of general goals and a process for completing a minimum of twenty-four hours of community-based learning experiences. The contract serves as a basis for grades and "the grade is decided between the student and the teacher at a conference" (p. 10). According to the report, each class offered provides "the subject-matter to which community projects and real-world experiences are related, and each class is a vehicle to exhibit individual achievements" (p. 10).

3. Frontenac Secondary School, Ontario, Canada, requires that half of the final exams in technological courses be "hands-on performance in the tasks for which students have been trained" (p. 10). For example, in electrical studies students are required to construct an alarm unit, and in auto mechanics students are required to identify actual mechanical problems and make recommendations.

Wiggins (1991) discusses something similar to authentic achievement when he talks about establishing standards that are evaluated by "necessarily varied student products and performances" (p. 19). He believes the only way to improve schools is to use authentic standards and measures. According to Wiggins, standards need to be established and students need to be given progress reports regarding how close they are to meeting the standards. He believes that one purpose of assessment is to provide a guiding picture of the student's movement toward a real standard. He acknowledges that vocational programs, athletic departments, art, music, and debate classes already use real standards. However, that is not true of the traditional academic subjects. He suggests that the traditional academic subjects move toward establishing authentic standards for their programs.

Spady's and Marshall's (1991) suggestions about assessments in their descriptions of transformational OBE closely parallel the thoughts of Archbald, Newmann, and Wiggins. They describe transformational OBE as differing from traditional OBE in that the "curriculum content is no longer the grounding and defining element of outcomes" (p. 2). They comment that in transformational OBE

> outcomes are seen as culminating exit role performances which include sometimes complex arrays of knowledge, competencies, and orientations and which require learning demonstrations in varying role contexts. (p. 2)

They believe that the student's learning must be demonstrated with higher order processes and complex, transdisciplinary role performances that simulate, if not create, real life conditions that matter to students after they finish school.

Likewise, Mitchell, (1990) associate director of the Council for Basic Education, recognizes the need for performance assessment (also called authentic or alternative assessment) to directly measure actual performance in subjects. In an *Education Week* commentary, she gives several examples of performance assessment, including open-ended mathematics questions, the use of portfolios, "exhibitions" that demonstrate student mastery, and writing assessments. She reports that performance assessments benefit education in three ways: (a) they reveal the presence of thoughtfulness and understanding, not memorization; (b) they require that a thinking curriculum be taught to all students; and (c) they involve teachers in assessment.

A final, if slightly different, look at assessment is evident in the work of Stasz, McArthur, Lewis and Ramsey (1990). They introduce individualized evaluation as a substitute for a single set of standards for all students. They believe that many classes currently have a predetermined set of standards that emphasize uniform skills. Their recommendation is that a nonuniformity in assessment permits teachers to personalize assessment. However, they warn, different standards do not mean lower standards. They are, instead, "a natural response to student diversity... be it ethnic, racial, experiential, or academic" (p. 24).

Conclusions About Assessment

Traditionally, student assessments have frequently taken the form of paper and pencil tests. This discussion about alternative types of assessment points in another direction—a hands-on type of assessment. Sizer's exhibition of mastery discussion, Archbald and Newmann's philosophy about authentic performances, Wiggin's establishment of real standards, Spady's and Marshall's thoughts about transformational OBE, Mitchell's discussion about performance assessment and the Stasz, McArthur, Lewis, and Ramsey comments about personalizing assessment all suggest that there are well thought out, progressive alternatives to the traditional forms of assessment. These alternative forms could provide some direction during the assessment debate.

The following statements summarize some of ideas that might be addressed during the debate which surrounds the assessment of students:

- The term assessment includes any method of evaluating or measuring student performance, establishing a grade for a student, or otherwise indicating student achievement.

- The two main purposes of assessment are to monitor the performance of schools and monitor the performance of individual students.

- The demand for aggregate assessment scores to monitor the performance of schools is likely to continue.

- Monitoring individual performance to identify student needs and motivate students toward improved performance has not been as effective as monitoring for the purpose of evaluating schools.

- Currently, there is a considerable amount of discussion surrounding the need to raise standards in education and establish national tests for those standards.

- Standards must refer to quality, not quantity. Quality standards need to be framed around the work that is undertaken and valued.

- Current tests, which contain collections of unconnected questions, do not assess, and may actually impede the teaching of the thinking curriculum.

- Assessments should be developed based on answers to the following questions:

    1. What kind of information do we want?
    2. Does the information collected represent an accurate estimate of significant knowledge or mastery?
    3. Does the assessment support instruction and students' knowledge of their progress?
    4. Is it fair for students from different social, racial and economic backgrounds?
    5. Is it designed so that both students and teachers are engaged in authentic practice of valued competencies?
    6. Does it help improve achievement, not simply monitor it?

- Several alternative forms of assessment are available. These forms, for the most part, require an actual performance of an authentic activity. Exhibition of mastery, authentic achievement, performance assessment, personalized assessment, and transformational OBE are just some of the names used to identify this concept.

- Real standards are based on the performances and virtues most valued in society. Assessments can be used to measure achievement of real standards.

Recommended Design Specifications for the Learning Process

After reading and discussing the review of related research and practice concerning the learning process in high schools, the Design Group for the project was asked to synthesize the desired characteristics of the learning process for new designs for the comprehensive high school. Through use of the nominal group process and consensus seeking, the following features of the learning process were identified as important design specifications:

1. Learning process is aligned with learner outcomes. Components of learning process (i.e., curriculum, instruction, and assessment) are aligned among themselves.
2. Learning process uses integrated curriculum.
3. Learning process uses assessment to improve learning.
4. Learning process is relevant to real life.
5. Learning process is personalized.
6. Learning process is active and experiential.
7. Learning process is emancipative.
8. Learning process is engaging.
9. Learning process is rigorous.
10. Learning process creates feeling of community of learning.

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APPENDIX E

Learning Organization: Reorganizing Learners, Learning Process, Settings, Time, and Staff in the Comprehensive High School

LEARNING ORGANIZATION: REORGANIZING LEARNERS, LEARNING PROCESS, SETTINGS, TIME, AND STAFF IN THE COMPREHENSIVE HIGH SCHOOL

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LEARNING ORGANIZATION: REORGANIZING LEARNERS, LEARNING PROCESS, SETTINGS, TIME, AND STAFF IN THE COMPREHENSIVE HIGH SCHOOL

New Designs for the Comprehensive High School establishes a vision, incorporates a set of learner outcomes, and depends upon a core set of learning processes. The next phase of the design-down process involves the traditional school organization for learners, learning processes, learning settings,.time schedules, and the staff. New organizational strategies and specifications should support and extend previous design specifications in ways that are aligned with the signature and outcomes, and aligned with the learning process.

First, the goal is to develop design specifications for the organization of learning that support the achievement of the following learning outcomes for the comprehensive high school:

> In order to lead productive lives in a complex and changing society and to continue learning, the learner demonstrates the knowledge, skills, and attitudes essential to: (a) Communicate with words, numbers, visuals, symbols and sounds; (b) Think and solve problems to meet personal, social, and academic needs; (c) Contribute as a citizen in local, state, national, and global communities; (d) Understand diversity and the interdependence of people; (e) Work cooperatively in groups and independently; (f) Develop physical and emotional well-being; and (g) Contribute to the economic well-being of society. (Minnesota Department of Education, 1991)

Second, the organization of learning should support the following learner process specifications for the comprehensive high school: (a) Learning process is aligned with learner outcomes. Components of learning process (i.e., curriculum, instruction, and assessment) are aligned among themselves; (b) Learning process uses integrated curriculum; (c) Learning process uses assessment to improve learning; (d) Learning process is relevant to real life; (e) Learning process is personalized; (f) Learning process is active and experiential; (g) Learning process is emancipative; (h) Learning process is engaging; (i) Learning process is rigorous; and (j) Learning process creates a feeling of community.

Finally, the organizational structures should support a strong school community with focus and character. Over the past several years researchers have described community, focus, and character as characteristics of schools that enhance the likelihood of student success. The sense of community, according to Raywid (1988), results from interaction and mutual independence, intention of permanence, expressive ties, communication, common and mutual sentiments, shared beliefs, and a ethic of individual concern and sympathy. Schools with character, according to Hill, Foster and Gendler (1990), "have clear, uncomplicated missions, centered on the experiences the school intends to provide its students and on the ways it intends to influence its students' performance, attitudes and behavior" (p. vii). These characteristics, when evident in the organizational structure, seem to improve learning.

Organizing Learners

Small schools may be better than large schools at providing the characteristics described by Hill, Foster, and Gendler, and Raywid. For example, two researchers, Boyer (1983) and Goodlad (1984), both addressed the size of the high school as a factor in the education of students. Boyer recommended that "large high schools organize themselves into smaller units—'schools-within-a-school'—to establish a more cohesive, more supportive social setting for all students" (p. 235). His recommendation was aimed at organizing high schools with fifteen hundred or more students into smaller units of a few hundred each. Boyer warned that care should be taken to prevent unintentional segregation by race or by economic status. Goodlad agreed with Boyer when he indicated that it is difficult to justify a senior high of more than five hundred to six hundred students. Although he admits there might be some curricular deficits if the school is too small, he is more concerned about the negative impact of large schools on students. He recommends that schools-within-a-school or houses be established to improve "the students' personal welfare" (p. 311). In addition to providing cohesive, supportive settings for students, the organization of learners (students) in the comprehensive high school should allow for the acquisition and assessment of identified learner outcomes.

Thus, appropriate strategies for organizing learners include those which provide expanded opportunities for students in small schools and those which provide more personalized groupings in large schools. Several strategies for organizing learners have been selected for further review because they represent efforts to meet the needs of students in the comprehensive high school. These strategies can be divided into two categories: (a) providing a small school within a whole school for *some* students, and (b) dividing the whole school into smaller schools for *all* students.

Providing a Small School Within a Whole School for Some Students

Large schools can meet the unique requirements of specific groups of students by organizing them into smaller, focused groups. These smaller, focused groups can be organized according to interests or needs. Both the school-within-a-school and the academy provide models for a focused organization of learners. However, providing a small school within a whole school for some students may be criticized if it divides students by ability level. Middle school, secondary school, and vocational research warn that grouping by ability level or dividing students so that they are perceived to have different ability levels should be avoided. The following sections define and explain models for organizing some learners into smaller groups and present a review of the literature that provides some direction for organizing students.

The school-within-a-school models currently in use are primarily the result of pulling some students with similar interests or needs from the mainstream and grouping them into a single unit. Most of the groups have been comprised of students who have difficulty functioning in the larger school structure. In addition, some school-within-a-school models operate as alternative mini-school structures that address special needs of groups of students. One example of this would be grouping students who do not speak English as their native language. Finally, some of the school-within-a-school models focus on special topics or are designed specifically for gifted students.

An example of a school-within-a-school program that focuses on one particular area of study is the Business & Marketing Specialty Program at Johnson High School (1990) in St. Paul, Minnesota. This program, according to a publication from the school, "is specifically designed to meet the needs of persons who have indicated an interest in the academic knowledge base and learning experience necessary to pursue advanced education in marketing and small business management." It provides "the training necessary for high school graduates to enter marketing careers upon graduation." This particular program accepts without prerequisites twenty-five students from each grade level ten through twelve. Another example of a school-within-a-school program is the Wheatley School in East Williston, New York (Lund, Smith, & Glennon, 1983). This program, established in 1971, was designed to provide a group of students with a unique learning environment. It included students from grades ten through twelve "who chose to participate in a program in which faculty members shared decision making and experimented with nontraditional teaching roles" (p. 503). According to the authors, the school governed itself with a constitution, power groups, a supreme court, and elected officials, and the program within the school focused on human relations, leadership, and governance skills. Although this program had some problems (i.e., other staff members believed the division between the traditional school and the school-within-a-school was unhealthy and some of the goals such as integrating disciplines and community involvement were not met), this 1983 report indicated they were offset by the benefits offered to the students.

In addition to the focused programs described in the previous paragraphs another possible school-within-a-school arrangement could be based on preferred learning styles. According to Sternberg (1990), "styles of thinking and learning are every bit as important as levels of ability" (p. 366). Sternberg reports variances in learning differences and the way students prefer to use their intelligence. Because both teachers and students use their favored teaching-learning style, it seems possible that matching those styles could capitalize on learning activities. It appears that students who learn in a like manner could be grouped so that the activities in which they are involved are congruent with their learning styles. The problem with this arrangement lies in the fact that students would not be exposed to thinking and learning styles different from their own. A better approach might be to help students develop the ability to shift from one style to another.

Amityville High School in New York (Perrin, 1990) and Blake Middle School (Sykes, Jones, & Phillips, 1990) use learning style approaches. Potential dropouts at Amityville High School were identified and block-scheduled into classes that addressed the unique learning styles of the students. According to Perrin, the students gained in both achievement and self-esteem. Blake Middle School in Minnesota uses an approach which addresses individual learner styles. Although the school does not divide students by learning styles, it does help teachers adapt classroom activities to accommodate differences in learning styles. Both Amityville and Blake Middle School teachers report a more positive learning environment as a result of the learning style approach.

According to a paper prepared for the Academy for Educational Development (Archer, 1989), academies are "three-year schools-within-schools" that link business and industry with schools in order to provide economically disadvantaged students with an "integrated academic-vocational education, career development, and enrichment activities, and nonacademic supports and employment opportunities" (p. 1). The purpose of the academy is to make education relevant in two ways. First, the academy links coursework to employment opportunities and second, it helps students make successful transitions to work or postsecondary education. Archer found the following features in the academy model: (a) It is intended to serve students who are working below their potential, although some academies strive for a mix of students; (b) it has an integrated, interdisciplinary curriculum with an industry focus that infuses the curriculum with practical applications to make it relevant; (c) it has academic and nonacademic support services that may include guidance counselors, as well as staff members from other community-based agencies; (d) it uses a mentor program to pair students with employees of participating industries; (e) it has a work experience program that is central to the academy program; (f) it has an active, ongoing, and dynamic partnership with business and industry; and (g) it is small with approximately one hundred students and five to ten full- and part-time teachers and counselors.

One successful example of an academy is the California Partnership Academy. According to Stanford Mid-Peninsula Urban Coalition (no date). Academies are special because they have a close working partnership between the high school and local employers, use "team" teaching, have small classes, develop vocational skills, contain a mentor program, include a work experience program, and provide motivational activities with employer involvement.

The academy model has been evaluated systematically. Archer points out that the evidence shows the model "decreases dropout rates, enhances student achievement, and increases rates of post-graduation employment" (p. 3). Archer reports that Public/Private Ventures has called the academy "the best single model in the country for business involvement in the schools" (p. 3).

The unique features of the academy model have led to positive results with economically disadvantaged students. Some of these same features could be considered and possibly incorporated into the organizational structure for students in the comprehensive high school. The rigorous, integrated, interdisciplinary curriculum, dedicated industry partnership, and primary focus on students as individuals are consistent with the design specifications previously established in the research effort.

Schools frequently provide smaller schools within the larger school for students who have unique needs. They have been widely used for economically disadvantaged-students and students at-risk of dropping out of school for various reasons. However, they have not been limited to those groups. Schools-within- a-school have also been developed for gifted students, students who have language restrictions, and students with specific career interests. The research indicates schools-within-a-school have produced positive results for the students who attend them.

Research on Organizing Learners

Although the school-within-a-school structure can fill the unique needs of some students, both middle school and vocational research discusses some concerns about grouping students. First, they discourage the use of grouping or tracking by ability level. Second, they discuss some of the ramifications of grouping students according to vocational interests.

Braddock (1990) and Oakes and Lipton (1990) each warn against dividing students by ability level. Braddock reviewed the current status of tracking in the middle schools and made some recommendations for middle school organization of students. Several of the comments seem to provide some direction for the organization of students in the comprehensive high school. According to Braddock, "nearly every school serving adolescents must face the dilemma of dealing with students' diverse academic skills and, at the same time, minimizing the use of labels that create invidious distinctions, lower students' self esteem, and lead to feelings of apathy" (p. 445).

Braddock found that some ability grouping existed in "roughly two-thirds or more of the nation's schools serving early adolescents and more than twenty percent assign students to all classes according to ability" (p. 446). Moreover, students may be assigned to all classes based on a single achievement score or they may be regrouped based on several criteria. According to Braddock, "variations in grouping and scheduling practices may purposely create some classes grouped by ability and others grouped heterogeneously." Ability grouping "has repeatedly been found to be ineffective for increasing student achievement" (p. 448).

Braddock recommends several alternatives to the rigid ability tracking, which meet the students' needs and have a less negative impact on personal development. These include: (a) between-class tracking, (b) better placement criteria and better ways of allocating resources, (c) provisions for extra help, (d) student involvement in the placement process, and (e) cooperative learning. Each of these alternatives requires additional explanation:

1. Between class tracking—must be limited to basic academic courses which clearly require different levels of prior preparation.

2. Better placement criteria and better ways of allocating resources—separate tests and recent grades should be used for each tracked subject. Additional resources should be allocated toward the instruction of students in the lower tracks.

3. Provisions for extra help—all students should have the extra help needed to earn good grades.

4. Student involvement in the placement process—students could be given a choice of tracks with unusual grading options (such as pass-fail) in required courses.

5. Cooperative learning—allows mixed level teams to learn together.

The following statement summarizes Braddock's comments about the prevalence of ability tracking in the middle schools:

> Learning opportunities in the middle grades remain highly stratified—despite a middle school philosophy that encourages heterogeneous classes, despite various calls for school reform and restructuring to develop critical thinking skills among the nation's youth, and despite exhortations to insure that all children are provided equal access to learning opportunities. (p. 449)

Oakes and Lipton report that tracking does not promote achievement for average and lower-ability children and it may not benefit the smartest ones. According to Oakes and Lipton "highly capable students do as well in mixed classes as in homogeneous grouping" (p. 158), "being in a low track can foster poor self-concepts, lower aspirations, and negative attitudes toward school" (p. 158), and "placements, once made, rarely change" (p. 157). In fact, they found that "tracking excluded many children from ever being in some classes" (p. 159).

Braddock and Oakes and Lipton discourage the use of tracking by ability level as a means of organizing learners. Although the emphasis in some of the research has not been on the comprehensive high school, it seems likely that many of the same concerns could be voiced about tracking at the high school level.

Vocational literature also addresses tracking. However, rather than directly discussing tracking students by ability level, vocational literature reports that students in vocational tracks may be tracked by perceived-ability level. Plihal, Johnson, Bentley, Morgaine, and Liang, (1992) provides an historical look at tracking according to vocational and/or academic interests as a way of grouping students. At the end of the 19th century, public school systems were providing a cultural-liberal education and craftspeople were being educated through apprenticeship programs. Then, working class families began to send their children to school. At about the same time Frederick Taylor's "scientific management" principles were being used to provide a factory model school system. These two factors facilitated the adoption of the attitude that vocational education could train workers, help socialize the poor, and "make schools more efficient by sorting students according to their probable destinies" (p. 8). Consequently, according to the report, "We have seen throughout the twentieth century that vocational and academic education have been treated as opposites, serving two different populations..." (p. 9). The vocational-academic tracking system may be a means for perpetuating the current American social class structure.

Several concerns have been raised about the tracking of vocational students. Plihal, Johnson, Bentley, Morgaine, and Liang ask: "If we have different curriculum strands, which students shall have access to which strands? Can different curriculum strands be equally beneficial to different students? What happens to students' lives as a result of tracking?" (p. 10).

The answers to these questions can be found in some of the more recent vocational education research reports by Copa and Tebbenhoff (1990); Beck (1990); Raizen (1989), and Philal, Johnson, Morgaine, Bentley, and Liang (1992). These reports recommend moving away from the vocational-academic stratification as a way of organizing learners. Philal found that reform reports recommend "no grouping according to past achievement or presumed ability" (p. 10). Beck believed that the vocational, college preparatory, general education organization of school tracks "denies the interaction that characterizes everyday life" (p. 51). Caroline Turner, as reported by Copa and Tebbenhoff, criticized many aspects of the current tracking system. She indicated that "not only are people tracked into vocational courses, but they are tracked out of taking courses that would help them, like physics and science, because those are for the advanced placement students" (p. 39). Raizen commented that the current education system "has adjusted by offering separate tracks, encouraging students to select 'preparation for doing' (i.e., vocational track, trade schools, and community colleges) or 'preparation for knowing' (i.e., academic track and college-university)" (p. 18). However, she continued, criticisms exist for both tracks—vocational education is criticized for "reifying a second-class educational track" (p. 18), and academic and general tracks are criticized because they do not provide "adequate preparation for the workplace" (p. 18).

The research indicates that organizing learners by ability level or by perceived ability level is detrimental to their learning. The middle school and secondary research specifically warns against placing students in permanent tracks. The vocational research recommends moving away from the current vocational-academic tracking system and moving toward the integration of the vocational and academic curricula. The research implications should be considered as learners are organized into smaller groups.

Dividing the Whole School into Smaller Schools for All Students

Several models have been identified that create smaller, more intimate groups for students with unique needs. However, there is some evidence to suggest that more personalized groupings, such as those offered in smaller schools, would be beneficial for all students. Smaller groupings provide students with the connectedness and interpersonal relationships that enhance learning. Models that provide small schools for all students include the house plan described by Oxley (1990), the Champlin Park High School (1991) house plan options, Woodland High School's (Wilcox, 1991) career path plan, and Raywid's (1989) schools-within-a-school structure, which she uses in her fictional Paradigm High School.

The house plan, according to Oxley, subdivides large schools "into physically discrete smaller units creating intimate environments that promote interaction among staff and students" (p. vi). It creates a small school atmosphere in a big school. Oxley reports the following key elements of the well-designed house plan:

1. The house plan creates a small school environment where staff and students interact and ample opportunities are available for students to participate in extracurricular activities.

2. The house plan allows coordinated and cohesive instruction with teachers working as members of cross-disciplinary teams.

3. The house plan includes a management system which allows staff and students to be involved in the decision-making process.

4. The house plan provides support systems that promote continuity and personal relationships.

5. The house plan requires that the physical facilities be organized so that staff and students get a small school feeling.

The structure for the house plan can vary depending on the needs of the students. Houses should not have over five hundred heterogeneously mixed students who should stay in the same house throughout high school. An interdisciplinary teaching team would be part of each house. In addition, each house should have a permanent support staff, a program of extracurriculars, a management team, and an operating budget.

The house plan can be organized in either a vertical or horizontal structure. A vertical structure has students from different grade levels in the same house. A horizontal structure divides one grade level into houses. The divisions may occur through distinctive programs that attract students or it may occur by random assignment of students. Goodlad recommends that houses be organized vertically "so that each contains students from all secondary grade levels, or, put differently, so that each student spends his or her entire junior or senior school career affiliated with one house" (p. 311).

Examples of modified vertical and horizontal structures are evident in the following committee report offered to the teachers in the Champlin Park High School (1991). Champlin Park High School includes four houses of approximately six hundred students. Students attend social studies, mathematics, and English classes in the house. CPHS allows for four different house configurations:

1. Each house could include grades nine through twelve. These students would remain in the same house for the four years in which they attend CPHS and work with the same guidance counselors and assistant principal for all four years.

2. CPHS could have two houses composed of ninth and tenth graders and two houses composed of eleventh and twelfth graders.

3. CPHS could have two houses of ninth and tenth graders which follow a traditional curriculum, and two houses of eleventh and twelfth graders which would provide opportunities to specialize in certain areas depending on their plans for after high school.

4. CPHS could have four magnet houses, grades nine through twelve, in which students would have expanded opportunities to specialize in certain areas. Examples of possible magnet themes are fine arts, social action, authentic communication, and academics. A modification of this plan would include two traditional ninth and tenth grade houses and two eleventh and twelfth grade "magnet" schools.

According to Oxley, "house systems that organize schooling around houses—instruction as well as support and student activities—have a more favorable impact on students than ones that do not" (p. 12). Oxley's research, based on four house systems in New York City, found that students derived both social and academic benefits from tightly organized house plans; those having many of the key elements of well designed house plans. Loosely organized house plans in schools of a similar size failed to provide the same results.

Finally, Oxley reports, several obstacles may need to be overcome in order to organize a house plan system. Some of these include: (a) a house system cannot coexist with traditional, subject-centered schooling, (b) most schools have too many courses for a house plan system, (c) teachers may be assigned to classes outside their house, (d) curriculum requirements may prevent the use of interdisciplinary curriculum, (e) it may be difficult to integrate support services into the house, and (f) there may be problems with the availability of physical space. With a concerted effort by those who are contemplating the house plan system, many of these obstacles can be overcome.

One example of a school that organizes learners into smaller groups is the Woodland High School in California. Wilcox (1991) reports that Woodland High School divides learners according to their chosen career paths. The structure used at Woodland meets student needs for relevancy and connectedness. Woodland Principal Kevin Brown (quoted in Wilcox) says, "We determined a few years ago that we were missing two key elements that helped motivate students to want to learn—practical application and relevancy. There wasn't a connectedness to high school for the vast majority of kids" (p. 39). Woodland's response was to cluster courses to prepare students for work in broad occupational fields. Students develop four-year plans that tie-into to one of the six career paths—agriculture and natural resources; arts and communications; business and marketing; health, home, and recreation; industrial technology and engineering; social, human, and governmental services.

Although the focus at Woodland is careers, Wilcox reports that the integrated curriculum allows college-bound students to take more vocational classes and vocational students to take more academic classes. The vocational and academic programs are viewed as complementary strategies, which allow all students to progress through the curriculum to reach their goals. Two of the unique factors evident in this organization of learners are "the interdisciplinary nature of Woodland's career paths [that] provides students with the breadth and depth of skills and knowledge they will need to succeed when they move into the world of work" (p. 40), and a "career path structure [that] brings all types of students into contact with one another" (p. 40).

In a second example, learners are organized by expressed interests at Paradigm High School—a fictional school incorporating many nontraditional concepts which was created by Raywid (1989). It uses a school-within-a-school approach for all students. Each of the schools-within-a-school has its own personnel and students and follows a "distinctive vision of schooling (p. 51)." According to Raywid, each of the four schools contains approximately two hundred fifty students and ten teachers who chose one of the four themes—Challenge Team, Social Services Academy, Sequoia Institute, and Media—according to their interests. Although students at Paradigm High School share some common areas such as the library, gym, and auditorium and occasionally participate in some full student body activities, most of the time they are in their own school, which is physically separated from the rest of the schools. The school facility was built as a giant "X" with the four lines representing the schools and the intersection of the the shared areas.

Some of the main characteristics of Raywid's school-within-a-school structure include:

1. Schools are carefully investigated by students before they select one, they are able to shift from one school to another if their needs or interests change.

2. Each school determine sparticular program content and activities appropriate for its student population within general curricular goals established for the entire high school.

3. Each of the schools has a full curriculum, a distinctive organization and culture, and a unique curricular emphasis.

4. Teachers are intimately involved in the design and direction of the school, and decision-making occurs close to the classroom.

5. Students are not limited to the classes in their school; they may occasionally take classes in other schools. In addition, programs at the college, community activities, internships, and independent study are available to students.

Raywid admits that Paradigm High School, like existing schools, "is not without its problems—but is refreshingly different from those with which we are familiar" (p. 58). She indicates that Paradigm High School's school-within-a-school structure may seem fanciful, but the features are not fictional. Although Paradigm High School does not exist, the features have been assembled from schools that do exist.

Conclusion

The literature discusses a variety of methods for organizing learners. These include heterogeneous grouping, grouping by ability, grouping by interest, and grouping by need. Frequently, when whole schools are divided into smaller groups, students are grouped either heterogeneously or by interest. When some students are selected for a smaller group, it is frequently because the current structure is not filling their unique needs. Although these programs have been successful, according to middle school, secondary school, and vocational research, care must be taken to prevent students from being tracked by ability or moved into a second-class track. Grouping students is most beneficial if it expands opportunities rather than limits them.

The entire student population in large schools can be divided into smaller groups. This organization of learners is beneficial because it allows students to feel connected to the school, develop more personal relationships, and pursue unique interests that enhance both motivation and achievement. The house plan and the school-within-a- school approach for all students are two ways that students in large high schools can be organized to provide many of the small school advantages.

Organizing the Learning Process

Sizer (1986), committed to the improvement of American schools, defined what he believed were the essential principles for a new high school. These nine principles included many of the ideas that are currently being incorporated into the rebuilding of high schools through the Coalition of Essential Schools. The principles deal with all aspects of the high school structure including the organization of the learning process. According to Sizer, the common, general principles of the coalition plan are:

1. An intellectual focus. Schools should focus on helping adolescents to learn to use their minds well. Schools should not attempt to be comprehensive, if such a claim is made at the expense of the school's central intellectual purpose.

2. Simple goals. School goals should be simple: that each student master a limited number of essential skills and areas of knowledge. While these skills and areas will, to varying degrees, reflect the traditional academic disciplines, the design of programs should be shaped by the intellectual and imaginative powers and competencies that students need, rather than necessarily by subjects as conventionally defined. The aphorism *less is more* should dominate; curricular decisions should be guided by the aim of thorough mastery and achievement rather than by an effort merely to "cover content."

3. Universal goals. The schools' goals should apply to all students, while the means to achieve these goals will vary as those students themselves vary. School practice should be tailor-made to meet the needs of every group or class of adolescents.

4. Personalization. To the maximum extent feasible, teaching and learning should be personalized. Efforts should be directed toward seeing that no teacher has direct responsibility for more than eighty students. To capitalize on this personalization, decisions regarding the details of the course of study, the use of students' and teachers' time, and the choice of teaching materials and specific pedagogy must be unreservedly placed in the hands of the principal and staff.

5. Student-as-worker. The guiding metaphor of the schools should be student-as-worker, rather than the more familiar metaphor of teacher-as-deliverer-of-instructional-services. Accordingly, a prominent pedagogy will be coaching to provoke students to learn how to learn and to teach themselves.

6. Student exhibitions. Students entering secondary school studies are those who can show competence in language and elementary mathematics. Students of traditional high school age, but not yet at appropriate levels of competence to enter secondary school studies, will be provided intensive remedial work to assist them in meeting these standards quickly. The diploma should be awarded upon a successful final demonstration of mastery for graduation—an exhibition. This exhibition by the student of his or her grasp of the central skills and knowledge of the program may be jointly administered by the faculty and by higher authorities. As the diploma is awarded when earned, the program proceeds with no strict age grading and with no system of *credits earned* by *time spent* in class. The emphasis is on students' demonstration that they can do important things.

7. Attitude. The tone of the schools should explicitly and self-consciously stress values of unanxious expectation ("I won't threaten you, but I expect much of you"), of trust (until abused), and of decency (the values of fairness, generosity, and tolerance). Incentives appropriate to particular students and teachers should be emphasized, and parents should be treated as essential collaborators.

8. Staff. Principals and teachers should perceive themselves as generalists first (teachers and scholars in general education) and specialists second (experts in one particular discipline). Staff members should expect multiple obligations (teacher-counselor-manager) and should show a sense of commitment to the entire school.

9. Budget. Ultimate administrative and budget targets should include, in addition to total student loads per teacher of eighty or fewer pupils, substantial time for collective planning by teachers, competitive salaries for staff, and an ultimate per-pupil cost not to exceed by more than ten percent that at traditional schools. To accomplish this administrative plans may have to show the phased reduction or elimination of some services now provided students in many traditional comprehensive secondary schools. (p. 41)

The principle that is particularly relevant for discussion regarding the organization of the learning process is Principle 2, which states the program of study must be simple. In 1983 Sizer explained:

> The complexity and confusion of the existing curriculum must be eased, in order to provide a setting where students can learn a few things well and learn how to learn. All students would be enrolled at all times in all areas, but the obvious need for variety and student choice would be accommodated within each of those areas. (p. 37)

Sizer's recommendation for eliminating the complexity and confusion of the existing curriculum is repeated in slightly different forms in much of the educational research. Powell, Farrar, & Cohen, (1985), state that "those who work in secondary education have little sense of an agenda for studies" (p. 306). The authors report that "there is only a long list of subjects that may be studied, a longer list of courses that may be taken, and a list of requirements for graduation" (p. 306). Boyer discusses the coherence of the curriculum. He reports that the current instructional program in its recognition of the integrity of disciplines "gives students a narrow and even skewed vision of both knowledge and the realities of the world" (p. 114).

Many educational researchers, in response to these and other similar concerns, believe that integrating curriculum in the high school may solve some of the problems that are related to current curriculum complexity, confusion, and incoherence. The following sections of this paper will discuss some of the research that has been done regarding integrated curriculum. The topics that will be addressed include: (a) reasons to integrate curriculum, (b) methods for integrating curriculum, (c) research about integrating curriculum, and (d) organization of integrated curriculum.

Reasons to Integrate Curriculum

Educational research has identified a multitude of reasons for organizing the learning process through integrated curriculum. These reasons range from Boyer's recommendation that students be allowed to develop connections between learning and the larger world to Goodlad's concern that separate vocational and academic tracks may create a self-fulfilling prophecy that creates two classes of workers. The following list describes five commonly cited reasons to integrate curriculum—political, cognitive, meaning, outcomes-based, and equity:

1. Political. Federal and state legislation and funding frequently rewards vocational-academic integration. An example is the current federal vocational education law, which includes tech-prep funding.

2. Cognitive. According to a recent report (National Council on Vocational Education, 1990-1991), serious problems exist with the current learning situation. Some of the problems based on cognitive science theories can be solved through an integrated curriculum approach which recognizes that: (a) people do not predictably transfer learning across subjects; (b) "holistic, complex, meaningful environments organized around long term goals" (p. xiii) are better than fractionated programs; (c) traditional curriculum design is based on a conceptual analysis that ignores what is already in the learner's head; and (d) skills and knowledge should be acquired in context.

3. Meaningful. Stewart's (1990) statement regarding the necessity to make a real-life connection between learning and life for each student reflects the sentiment of many others who recognize the need to make learning meaningful:

> In all, educational experiences will have little meaning to secondary school students unless the experiences show a real-life connection . . . rather than learning fragmented content within isolated subjects the students must, instead, be substantively involved in meaningful teaching-learning situations in which they constructively apply subject-integrated content to real-world problems. (p. 15)

4. Outcomes based. For the past several decades, students learning has been measured by Carnegie units. A Carnegie unit was defined by the hours spent studying a particular subject. If a student spent enough hours in one subject, the student would earn one unit of high school credit. Outcome-based standards, where students will be required to demonstrate achievement of outcomes learned, have the potential to eliminate the Carnegie unit as a measure of competence. In most cases the outcomes are not subject or discipline specific; they can be acquired in a multitude of ways. According to the Minnesota Department of Education (1991), the Minnesota outcomes will be measured by "validated performance indicators" (p. 4) rather than time spent on a specific subject.

5. Equitable. Historically, according to a report by Selvin, Oakes, Hare, Ramsey and Schoeff (1990), "across the nation, students current access to and participation in vocational and educational opportunities differ considerably" (p. 5). Some schools focus on academics and some on vocational courses. In addition to inequities in program offerings, they also report that tracking students limits access to and participation in vocational and academic programs. Goodlad recognizes similar concerns regarding the equity of education for all students. Three questions should be addressed: (a) Is the division of secondary schools into students emphasizing vocational studies and others pursuing primarily academic programs a self-fulfilling prophecy reflecting a popular myth about learning that begins its relentless course in the primary grades? (b) Is the ultimate fulfillment of this prophecy a further division of people into two classes of workers? (c) Is there equity among socioeconomic classes and white, blacks, and Mexican-Americans in regard to the circumstances and the outcomes of the process? (p.147)

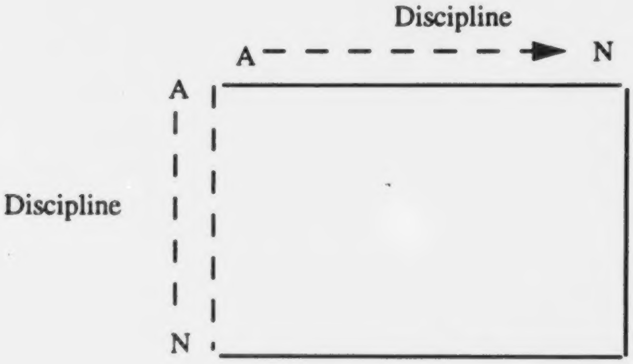
The themes that are expanded upon in the above paragraphs provide direction for the organization of the learning process. In each case they identify concerns about the current system's attempt to address political issues, cognitive and learning issues, the meaningfulness of the curriculum, the acquisition of outcomes, and the need for equity for all students. It is possible that integrating curriculum areas would eliminate some, and perhaps, all of the above concerns and issues regarding the organization of the learning process.

Methods for Integrating Curriculum

Integrating curriculum ceases to be organized in the traditional fragmented, discipline model. Instead subject matter is combined to form a coherent, connected design for learning. The combination of discipline areas can take many forms. For example, curriculum could be integrated through combining different academic disciplines, combining academic and vocational education, or combining all education within a thematic or topic-centered approach. Plihal, Johnson, Bentley, Morgaine, and Liang found that "some approaches to integrating curriculum retain the autonomy of subject areas; other approaches blur or even erase distinctions between subjects" (p. 12). Some possible options for integrating curriculum include

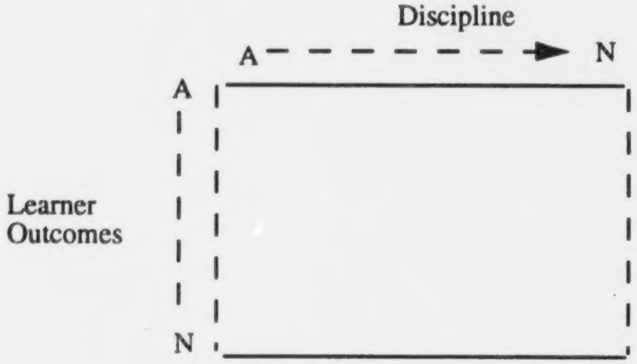
a. Discipline by Discipline

Figure 1



b. Learner Outcomes by Discipline

Figure 2



c. Learner Outcomes A ---------> N

(Eliminate departments for each discipline.)

d. Clustered using a theme, problem, or area of social development.

In a recent article, Fogarty (1991) identified nine ways to integrate curriculum. Fogarty's models range from a simple connection between two topics in a subject area to a complex and cohesive integration of all learning that is directed by the learner. Her models are arranged in a continuum from very limited integration to complete integration:

1. Connected model. Connections are made between the topics within each subject area. For example, the geology unit is related to the astronomy unit.

2. Nested model. Natural combinations are integrated. For example, "the circulatory systems could target the concept of systems" (p. 62).

3. Sequenced model. Topics are arranged within different disciplines so that similar units coincide.

4. Shared model. Concepts, skills and attitudes traditionally taught in separate disciplines are taught with a single focus.

5. Webbed model. Themes are used to integrate subject matter for cross-disciplinary units of study.

6. Threaded model. "This model threads thinking skills, social skills, study skills, graphic organizers, technology, and a multiple intelligences approach to learning throughout all disciplines" (p. 63-64).

7. Integrated model. "Interdisciplinary topics are rearranged around overlapping concepts and emergent patterns and designs" (p. 64).

8. Immersed model. All data is funneled through an area of interest; the integration takes place within the learner.

9. Networked model. Learners direct the integration process.

In addition to Fogarty's listing, other authors have discussed methods of integration. Drake (1991) discussed the following integrated approaches that characterize the stages for the development of an integrated curriculum in Ontario. Like Fogarty's listing, Drake's experiences range from the simplest form of integration to more complex forms:

1. Multidisciplinary experience. Different discipline areas were centered around a theme.

2. Interdisciplinary experience. Activities that were used to develop the theme were identified by subject area.

3. Transdisciplinary experience. Content and the theme were one and the same; there were no discipline areas identified.

Plihal, Johnson, Bentley, Morgaine, and Liang also discuss several theoretical approaches for achieving integration of subject matter. The approaches they identify include:

1. Reinforced curriculum. Supplemental materials are used to reinforce content in an existing class.

2. Correlated curriculum. Two or more teachers make connections between subject matter.

3. Fused curriculum. Content, materials, and applications from two or more subjects are combined to form a new subject.

4. Broad field curriculum. Synthesized knowledge is used to builds on a number of content areas to relate to a common goal.

5. Core curriculum. Knowledge and learning are organized around identified problems.

As is evident from the above lists of theoretical approaches and models, integration of subject matter can take many forms and be accomplished with varying degrees of intensity. Each of the authors has identified several different integrated approaches that could be most appropriately used in different situations. In fact, according to some recent research combining vocational and academic curriculum, the researchers discovered that different approaches were used depending on the situation. Beck, Copa, and Pease report that teachers and administrators made decisions about which approach to use based "on their perceptions of the high school's goals, the students' needs, and their experience with interdisciplinary teaching" (p. 29).

Research About Integrating Curriculum

Researchers have discussed integrated curriculum from an historical perspective, in the middle school, and in vocational education. Much of the discussion identifies issues, concerns, and implications for integrating curriculum in the comprehensive high school. Although the discussion about integration of curriculum has recently expanded to academic areas, for the most part, the initial discussions surrounding the integration of curriculum appear in middle school and vocational education literature.

According to Vars (1991) "efforts to integrate the curriculum have a long history" (p. 14). He reports that since 1942 more than eighty normative or comparative studies have reviewed the effectiveness of integrative programs. Results show that "in nearly every instance, students in various types of integrative-interdisciplinary programs have performed as well or better on standardized tests than students enrolled in the usual separate subjects" (p. 15).

Middle school literature, according to Beane (1991), carries the idea of "developing a program of common learnings [sic] for all early adolescents that would be experience-centered and organized around personal and social problems" (p. 10). However, he reports, most middle schools and junior highs are still using the "subject-centered organization." Although school personnel may discuss their interdisciplinary units, he believes the units are in fact multidisciplinary and certainly not integrative. His research indicates that the continued differentiation of subjects exists and "even the more innovative curriculum examples in middle schools are really adapted versions of the high school curriculum" (p. 10).

Vocational research has recently addressed integrating academic and vocational education. According to Benson (1991), the associates of the National Center for Research in Vocational Education (NCRVE) hold that integration of vocational and academic learning means

> revising processes of instruction such that academic programs display bountiful applications of theory, i.e., what the theory is used for, while at the same time the vocational programs incorporate theory that supports the practical skills that are being learned. (p. 15)

Several successful examples of integration of vocational and academic learning exist. Beck, Copa, and Pease report that based on research involving interdisciplinary collaborations by vocational and academic teachers, teachers came away "with new ideas for research and development and a desire to continue developing models for interdisciplinary collaboration . . ." (p. 31). Plihal, Johnson, Bentley, Morgaine, and Liang give five examples "that represent various ways in which [integration efforts] are combined and expressed in practice" (p. 30). Beck (1991) in a discussion of academic-vocational integration reports that schools should have more than integration. He recommends that they go a step further to interaction. Interaction is "collaboration where the curriculum is not only a mechanical combination of the vocational-technical and the academic, but a thoughtful amalgam to which the collaborating teachers interact to produce course content stimulated by a give-and-take" (p. 101).

Currently, although there is a "great deal of activity and interest in integrating [vocational and academic] curriculum" (Plihal, Johnson, Morgaine, Bentley & Liang,p. 42), there is also "a lack of clarity and precision about the purpose and procedures for integration" (p. 42). According to the report, the following issues surrounding the vocational-academic integration efforts should be discussed: (a) What should be integrated? (b) Who should benefit from an integrated curriculum? (c) What is the desired outcome of integration? and (d) How should integration efforts be evaluated?

Organizing the Integrated Curriculum

Even though curriculum is integrated, it seems necessary to somehow organize or departmentalize the curriculum within the comprehensive high school structure. The following methods provide some suggestions for the organization of an integrated curriculum:

1. Career paths. Integrated curriculum could be organized into clusters of courses designed to prepare students for work in broad occupational areas. One such example is Woodland High School, which uses the following career paths: agriculture and natural resources; arts and communications; business and marketing; health, home, and recreation; industrial technology and engineering; and social, human and governmental services. Another way to organize curriculum from a workplace perspective would be use the basic workplace skills identified by Carnavale (1991): the academic basics (i.e., reading, writing and computation; learning to learn; communication: i.e., speaking and listening); adaptability (i.e., problem solving and creating thinking; developmental skills: i.e., self esteem, goal setting, motivation, and personal and career development); group effectiveness (i.e., interpersonal skills, negotiation and teamwork); and influencing skills (i.e., organizational effectiveness and leadership skills).

2. Thematic approach. This approach usually requires the organization of curriculum around several conceptual themes that are relevant to the students. One somewhat limited example of the thematic approach is the Humanitas Program in the Los Angeles Unified School District (Aschbacher, 1991). This program uses themes such as women, race, social protest, the Protestant ethic, and the spirit of capitalism to provide integrated curriculum and connectedness between the course work and the student's personal and cultural backgrounds.

3. Problems or concerns. According to Copa (1991) problems or concerns are the "discrepancy between the desired state of affairs" (p. 100) and the present state of affairs. These problems or concerns, once identified, could suggest the content or curriculum areas. Copa identified the following problem areas: understanding, rights and responsibilities, relationships, technology, general competence, specific competence, and managing. These problems or concerns could be used as a basis for organizing curriculum.

4. Learner outcomes. The learner outcomes could be used as a basis for organizing the learning process. Because of the interdisciplinary nature of the outcomes, learners can master each outcome in a number of different ways. Some examples of ways the outcomes could be mastered are through the traditional discipline structure, through an integrated structure, outside the home school, or through

personalized projects. Learning processes organized around learner outcomes could ensure that learners mastered each outcome before graduating.

Although the above suggestions can be used as a starting point for a discussion about the organization of an integrated curriculum, they are not meant to be a solution to the problems that need to be resolved.

Organizing the Learning Setting

In addition to the home high school as a setting for learning, other learning settings for learning include those which are found in the community, the workplace, the home, and in other educational institutions. These alternative settings can provide unique experiences for students in large schools or additional learning opportunities for students in small schools.

Learning Settings in Other Educational Organizations

Educational opportunities for secondary students are not restricted to the home school. Over the past several years, colleges and vocational schools have provided a variety of courses and programs for high school students. In addition, programs for students with special needs or interests have been developed at state centers, area learning centers, or vocational centers. Finally, recent legislation at both state and federal levels, such as the post-secondary option legislation, tech-prep legislation, and secondary school choice, has expanded the educational settings available for high school students.

Colleges

Colleges have frequently allowed students to register for classes that are not offered in the high school. In the past, this option has been primarily available to gifted or advanced students who want to continue advanced course study. Under the post-secondary options plan (to be explained later) several states have expanded this option to all students. Students frequently receive simultaneous college and high school credit for courses taken in the college setting.

Area Vocational Schools

According to McDonnell and Grubb (1991), area vocational schools are "designed to produce economies of scale by providing vocational programs to students in regions larger than school districts" (p. 24). These regional institutions provide "intensive vocational training for a broader range of occupations than could typically be offered in comprehensive high school" (p. 25). McDonnell and Grubb report that during the 1970s, secondary enrollments in the vocational schools have declined, and the schools, in order to ensure survival, have expanded their enrollment to adult populations.

State Schools

Some states have adopted laws that provide special state schools for students who are gifted in a particular area such as mathematics, science, and the arts. According to the U.S. Department of Education (1989), Louisiana, Mississippi, North Carolina, and South Carolina have state schools. Minnesota recently joined the list when it passed legislation which created the Minnesota Art School for high school students.

Area Learning Centers/Alternative Programs

Area learning centers and alternative programs focus on academic and learning skills, trade and vocational skills, work experience, and transition services. Frequently, these area learning centers-alternative programs operate as second chance programs for students whose needs aren't being met in the home school. The following categories of students are identified in one state as those who can benefit from area learning centers: those who are chemically dependent, not likely to graduate from high school, need assistance in vocational and basic skills, can benefit from employment experiences, and need assistance in transition from school to employment.

Post-secondary Options

According to a document used in the Regional Strategy Meetings on Choice in Education (U.S. Department of Education, 1989), under a post- secondary enrollment options program "the State authorizes local educational agencies to permit secondary students to enroll in courses in eligible post-secondary institutions and receive secondary or post-secondary school credit for such courses" (p. 3). States which have post-secondary enrollment options include Arizona, Colorado, Florida, Iowa, Louisiana, Maine, Minnesota, Ohio, Utah, and Washington, and the legislation has been proposed in additional states.

Tech Prep

In 1990, Federal legislation was passed that recognized the value of coordinating the secondary and post-secondary educational program. Hoerner (1991) discussed the following elements of the legislation: (a) funding is provided for tech-prep planning and implementation; (b) the act requires that a combined secondary-post secondary program be developed that leads to an associate degree or two-year certificate, provides technical preparation, builds student competence in academics, and leads to employment; and (c) the program must be carried out under an articulation agreement which involves the two years of secondary school preceding graduation and two years of higher education. According to Hoerner, "tech-prep programs, by incorporating a work incentive strategy, have the opportunity to involve business-industry and add relevancy to education for many of our youth" (p. 19).

Secondary School Choice

Recently, legislation enacted in Arkansas, Iowa, Minnesota, Nebraska, and Ohio, and proposed in several other states, has provided that students may attend any school within their state even though the student is not a resident of that district. Normally, the state funding goes with the student to the school of their choice. Some of the state statutes ask for voluntary participation from districts and some mandate participation. Most of the time, enrollment in the district of choice may not be denied on the basis of the applicant's academic achievement, may not interfere with desegregation plans, and requires students provide their own transportation. According to Nathan (1989), "In places as diverse as East Harlem and the state of Minnesota, such plans have had an immediate positive impact on student achievement."

The alternative settings for learning that are available in other educational institutions have multiplied in recent years. The recognition that the traditional home school setting isn't necessarily meeting the needs of all students seems to have stimulated this expansion of educational opportunities for students. Other institutions, outside the home school, have been able to provide options which address student needs and interests.

Learning Settings in the Community

In addition to the added learning settings available in some educational institutions, other places for learning can also be provided within the community. These settings are capable of creating added opportunities for students in small schools as well as providing unique experiences for students in medium and large-size schools. Models included in this category would incorporate the community or business into the school structure; sometimes this is described as a partnership. Apprenticeship programs, cooperative work experience programs, school-supervised work experience, and community service learning are examples of strategies that would be in this category.

Apprenticeship Programs

Traditionally, apprenticeship programs have teamed an apprentice with a master—someone skilled in a trade. This relationship has allowed the apprentice-learner to work with the master-teacher to acquire the skill and knowledge required to perform the job. Recently, some researchers have recommended that apprenticeships be reorganized to provide better learning experiences. One example of this reorganization is discussed by Raizen (1989) who, although she recognizes that apprenticeships are a reasonable way of educating for work, believes they must be more than a hands-on experience. She reports that apprenticeships must use modern work settings with highly skilled coworkers and teachers who provide guidance and explanation. Apprenticeships should encourage collaborative learning, creativity and ingenuity, and observation and practice. Raizen reports that traditional apprenticeship programs must be transformed to match modern work.

The German apprenticeship model represents one way to approach apprenticeships. Perry (1991) reports that this model provides "part-time vocational schools teaching academics and vocational skills combined with on-the-job training at local companies" (p. 46). One German school, which specializes in social work and domestic subjects, provides a two-year course of study with the first year devoted to classwork and the second year directed toward employment. A second school specializing in sales and business, provides a two- to three-year program with student apprentices in school half a day and with their employer half a day.

Cooperative Vocational Education

Cooperative vocational education programs usually contain three components: related classroom experience, employment, and participation in a youth organization. Students who participate in these programs typically attend classes in the morning and work in the afternoon. Stern, McMillion, Hopkins and Stone (1990) report that the research on cooperative education programs has failed "to discover consistent statistical evidence that co-op students experience greater success in the labor market than other students" (p. 377). However, even though the research is mixed regarding future success in employment, several immediate benefits were evident. For example, coop students "claimed that their high school programs favorably affected their decision to remain in school, to attend classes during the senior year, to obtain a full-time job immediately following graduation, to obtain a job related to their high school program, and to be more satisfied with their final jobs" (p. 378).

School Supervised Work Experience

The school supervised work experience is usually more flexible than the cooperative vocational education program. According to a report from the Wisconsin Department of Public Instruction (1990), "school-supervised work experience does have the potential to develop greater self reliance, a more positive work orientation, and a clear sense of identity" (p. 2). In Wisconsin the school-supervised work experience is defined "as a set of planned educational experiences, supervised by licensed school personnel, designed to enable learners to acquire attitudes and knowledge for work and other life roles by participating in actual or simulated work settings related to in-school instructional programs" (p. 2). These programs are available to all students kindergarten through grade twelve, with "more specific occupational work training in grades seven through twelve, and paid work experience in grades ten through twelve" (p. 2).

Community Service Learning

Community service learning exists when students enter the community to work, study, and do community service projects. According to Conrad and Hedin (1991) community service "represents a wide array of programs operating under an equally wide array of assumptions about their impact" (p. 745). Briefly, the arguments for community service are that it's "a way to stimulate learning and social development, a means of reforming society and preserving democracy and an antidote to the separation of youth from the wider community" (p. 745). This interaction with the community would be experiential in its orientation. Conrad and Hedin report that "research on the impact of community service suggests that it can and often does have a positive effect on the intellectual and social-psychological development of participants" (p. 747).

Goodlad recommends community service for students and discusses a phase in the education-school continuum where there would be "a combination of work, study and service conducted within an educational ethos . . . with the more academic aspects arising out of guided experiences rather than the other way around" (p. 347). Individual and group counseling would be a part of the program and community members could be mentors, serve as role models, supervise, and coach students who were assigned to them.

Apprenticeships, cooperative vocational education, school supervised work experience, and community service provide added learning settings for students. Students are in a real world environment, they observe experts, and they engage in real experiences. These experiences reportedly have positive effects on students. Other experiences would include internships. Although most typically real world experiences are found near the end of a program of study, they ideally should be intertwined with study at all levels.

Organizing Learning Time

Outcome-based learning focuses on the axiom that learning should be the constant and time the variable. This represents a departure from the current educational structure based on Carnegie units, hours per day, and days per year. As this movement to variable time schedules for learning continues, schools will need to make decisions that provide flexibility in learning schedules. Flexible time schedules for learning can be provided in several ways. Some of the strategies that provide more flexible scheduling are found in mastery learning/outcome-based education, the Champlin Park High School structure, the Copernican Plan, and Sizer's Essential Schools flexible time for learning.

Schleisman and King (1990) report that outcome-based education (OBE) and mastery learning models focus on making learning the constant and time the variable. These two programs normally follow Bloom's mastery learning model as implemented at Summit High School (1991) in Frisco, Colorado. In the mastery learning model the teacher defines the objectives clearly, provides instruction to the entire group, and completes a formative evaluation. Students who have mastered the objectives move on to enriched topics or advance to the next unit. Students who have not yet mastered the objectives complete some form of corrective assignments or participate in some other second chance learning activity. After they have provided evidence of mastery they move, on to new material or enriched activities. Mastery learning can be accomplished in the traditional six or seven period day. The mastery learning/outcome-based education model allow extended learning times to be provided over several days or in summer school.

In 1992 Champlin Park High School will adapt the traditional six period day to allow all teachers to have the same preparation period and provide three ninety-minute class periods within the day. All teachers will have a common preparation period during the first hour of the day. Students will arrive at school after the preparation period is over and attend three classes. The first and third class periods last ninety minutes. The second period lasts for two hours and includes four lunch periods of one-half hour each. All students will be in class the entire day; study halls will be eliminated. In addition to the alteration of the traditional time schedule, Champlin Park is using an outcome based education approach, which provides added flexibility to the learning process. Some of the benefits of this plan include: (a) no teacher has more than three classes of students limiting teacher contact to approximately ninety students; (b) no teacher will have to prepare for more than three different subjects; (c) in-class time will be provided for students to have in-depth study of course material; (d) students will need to manage homework for three classes, not five or six; and (e) teachers will be able to work together to prepare during their common planning period. As this list of benefits indicate, adaptation of the traditional school day is designed to improve the educational delivery system for both students and teachers.

Carroll (1990), claims that the current high school structure places students in perpetual motion and interrupted study. With his *Copernican Plan:*, he proposes "major restructuring of virtually all basic systems within a high school" (p. 358). The plan requires a fundamental change in schedule. "Instead of having students change locations, subjects and activities seven to nine times each day, we ask them to concentrate on one or two subjects at a time each taught in an extended macroclass"(p. 358).

Features in the Copernican Plan include macro scheduling, individualized instruction, opportunities to deal with complex issues, differentiated diplomas, mastery-based credits, efficiency of learning, individualized learning plans, and dejuvenilizing high schools. Macroscheduling addresses the issue of superficiality, which occurs because too many classes are offered in one day and, consequently, no subject is studied in depth. Two alternatives to the traditional schedule are proposed: (a) one four-hour class each day for thirty days; and (b) two two-hour classes each day for sixty days. Macro classes allow students to concentrate on one or two subjects at a time. With such extended classes, it seems evident that instructional methods need to change. What student could pay attention to a four-hour lecture? Under the Copernican Plan the teacher teaches one or two classes at a time. Fewer classes allow teachers to focus on different levels of student ability within the class as opposed to different students and different subjects. Therefore, the Copernican Plan allows teachers to use individualized instruction geared to the student's level of understanding. Because students study the same subject for extended periods of time, they are able to get into the more complex issues that surround the subject. In addition, mastery learning, individual learning plans, and differentiated diplomas allow each student to achieve at a personalized level.

The Copernican Plan requires that students use responsible, mature behavior—Carroll calls it dejuvenilizing the high school. "The Copernican Plan affects every aspect of the school environment—physical, organizational, and psychological—in ways that encourage more responsible behavior on the part of students . . . and provides a more adult, mature, productive, personalized, relevant, and interesting high school experience for each student" (p. 365).

Sizer also addresses the need for flexibility in the organization of learning time through the nine principles for the Coalition of Essential Schools. Sizer recommends that *time served* and *credits earned* disappear as a criteria for performance. Instead, students need a setting where they can learn a few things well, be required to exhibit their mastery of goals, and be allowed to attend school until that mastery is attained. Each school in the Coalition is attempting to develop a program that addresses the personal needs of students. Although Sizer does not advance a specific model for providing flexible learning time, he believes it is essential to provide students with ample time to master the subject matter. No longer will teachers be allowed to simply cover the material. Students must demonstrate that they have mastered the material before they graduate.

Each of the above strategies for organizing learning time has a slightly different emphasis although all agree that learning, not time, is the critical element. First, the mastery learning/outcome-based education model can be accomplished within the traditional time structure through expanded learning times which do not have to occur within a continuous time period but can be pursued over consecutive days. Second, Champlin Park's model allows the day to be structured to the benefit of both teachers and students. Third, Carroll's Copernican Plan recognizes the need to have extended time periods for in-depth study. His plan organizes the school day into extended blocks, which allow for that in-depth study and mastery of material. Finally, Sizer's flexible learning time requires that ample time must be available to students so that they can master the subject matter and be able to demonstrate subject matter mastery bef[illegible]ation. Each strategyfor organizing learning time is based on the belief that learning is the constant and time the variable.

Organizing the Teaching Staff

Boyer (1983) reported that the average high school contains sixty-three classroom teachers and "eleven other full-time professional staff members such as librarians, guidance counselors, and principals" (p. 158). These adults typically operate in close proximity to one another. However, even though they are physically close to one another, the traditional self-contained classroom and heavy teaching schedule isolate teachers from spending time in the company of the other adults. Boyer reports that teachers often have no permanent classrooms, inadequate teaching supplies, and fear physical violence and assault. Boyer concludes that "the teacher's world is often frustrating, frequently demeaning and sometimes dangerous" (p. 159). As a result of such staff situations, educators are reviewing the current organization of the staff and making recommendations they feel should result in improved conditions for both the staff and the educational system. The ideas recommended could be placed on a continuum that ranges from slight modifications to the traditional organization of the staff to an extensive integration of staff within a school-within-a-school structure. The following categories seem to represent steps in the continuum: (a) some modification of traditional staff organization; (b) extensive modification of traditional staff organization; (c) integration of some staff in a new structure; and (d) integration of most staff in a new structure.

Some Modification of Traditional Staff Organization

Boyer's recommendations represent some modifications in traditional staff organization. Specifically, he focuses on improving the working conditions of teachers without changing the basic structure of the traditional school. He recommends that high school teachers: (a) "have no more than four formal class meetings" (p. 159) and one period of small seminar or independent work with students; (b) have sixty minutes a day for preparation time; (c) should not have to supervise lunchrooms and hallways; (d) should be provided with adequate supplies and attractive lunch rooms, and (e) should be able to teach in a physically safe environment. In addition to the improvements in working conditions, Boyer also believes that teachers should be recognized for their talents. According to Boyer, his recommendations for improved working conditions and teacher recognition are necessary for improved education.

Extensive Modification of Traditional Staff Organization

Benson discusses more extensive modifications in the traditional staff organizational structure. His modifications, which address the need for greater teacher collegiality and collaboration, can, like Boyer's, be accomplished within the traditional structure. His recommendations include: (a) all teachers should have "a single time in the week to meet and work together as a whole school group (p. 19), and (b) integrative techniques such as "team teaching by academic and vocational faculty, joint design of programs, collaborative efforts in writing problem sets and other instructional materials, common efforts in devising new schemes of student assessment,(p. 19) should be used to provide collegiality. Benson's recommendations are designed to improve the working conditions and encourage communication.

Other examples of integration of staff in traditional school structures were discussed by Drake and Beck, Copa and Pease. Drake reports that "three men and three women, strangers to one another, selected from across the province to develop interdisciplinary curriculums funded by the Ontario Curriculum Superintendent's Cooperative" (p. 20), each with expertise in a different subject area, developed integrated curriculums for schools. In this case the integration of staff occurred outside the classroom and focused on joint writing of curriculum. Beck, Copa, and Pease report that within the traditional school structure, classroom projects that integrate vocational and academic eachers can be successful. Integration sparked student interest and motivated them to "work hard on their projects" (p.

31). In addition, theire teachers indicated that the communications among the colleagues had improved. These integration project happened within the traditional school structure.

Integration of Some Staff in a New Structure

When students in large school are divided into smaller groups, the staff organization can change as well. Two structures that represent integration of some staff in a new structure occur when some staff assignments are changed as a result of providing a small school for some students, or some staff assignments are changed as the result of dividing the whole school for all students without dividing the whole staff.

Nickle, Flynt, Poynter, and Rees (1990) report an example of staff changes as a result of providing a small school for some students. According to the authors, four teachers with multiple certifications were chosen to become the nucleus for an interdisciplinary school-within-a-school program for a group of eighty students. With support from the Coalition of Essential Schools workshops, teachers altered the structure of the school day and used a coaching instructional style. The eighty students contained all ability levels and age groups in grades ten through twelve. The structure encouraged teachers to coordinate teaching and "draw on what other we know has been done by other members of the teaching team" (p. 152). It appeared to be successful. However, as this program was expanded to include more students and additional teachers, it was no longer voluntary. Nickle, Flynt, Pointer and Rees (1990) report enlarging the program resulted in less satisfaction of students and teachers. They recommend that the entire staff be kept up-to-date and provided with information that supports the changes.

According to Oxley, some loosely connected house plans provide division of students for some purposes rather than all purposes. For example, she describes one house plan which organized by providing a full complement of support staff—deans, counselors, family assistants—to each house but did not assign teachers to specific houses. Another house plan assigned a small core of teachers and partially organized support staff around each house. Still, a third school assigned students to class size groups that met with a teacher coordinator for one period a day. No other support or teaching staff were assigned to the students. Each of the methods provided a method for integrating some staff members into the house structure.

In these examples only a portion of the staff in each school is assigned to a specific house or a school-within-a-school. The remainder of the staff is organized according to some other model. Usually they remain in a traditional structure, divided by disciplines.

Integration of Most Staff in a New Structure

When the entire student body is divided into smaller groups, it may be appropriate to divide the staff as well. Examples of this division of staff can be found in Raywid's fictional Paradigm High School, Oxley's recommendations for the ideal house plan, and the Holweide School in Cologne, Germany.

Raywid's (1989) Paradigm High School divides the entire student body into four schools-within-a-school that each focus on a particular theme, which evolves out of teachers and students interests. Raywid recommends ten teachers and two hundred fifty students be assigned to each school. The teachers would meet in groups to discuss general matters and elect a teacher director for each school, who is responsible for school leadership more than management. In addition to the large group meetings, smaller teacher groups would meet to discuss team teaching and other responsibilities. Although ten teachers were assigned to each group of students, students need not necessarily receive all instruction from the ten teachers assigned to their school. Raywid suggests that students may occasionally register in classes in another school, take courses at colleges or universities, be taught by someone from the community, or do individual study with mentors who could be local business or professional people. Because some facilities such as the library, the gym, and the auditorium are shared by all students, it appears faculty in those areas would also be shared. In addition, to a teaching assignment, each teacher has an advisory group which meets regularly. Each student, through the advisory group, is provided with one adult with whom each student connects. Raywid believes that this school-within-a-school structure will encourage the development of a socio-cultural system that truly engages students and allows teachers to be more effective.

Oxley's recommendations for an ideal house plan deal with several questions which surround staffing of the house. She recommends that houses be large enough to "support a full complement of core course teachers, thus allowing students to take most or all of their core courses within a house" (p. 31). In addition, "a sufficient number of guidance counselors and, possibly, a social worker and paraprofessionals should be assigned to the house to permit students to meet most of their needs within the house" (p. 31). Finally, each house should include a coordinator (this person could be an assistant principal) "who can organize house activities and coordinate whatever services are provided through the house" (p. 31). Oxley believes her recommendations will "have a major impact on school climate and thus on student learning and teacher morale" (p. 52).

Holweide School in Cologne, Germany, uses a structure that it identifies as team-small-group-plan. This plan divides the students and staff in a school of approximately two thousand students and two hundred teachers into smaller units called teams. According to Ratzki and Fisher (1989), the teams are small groups of teachers, usually six, responsible for ninety students who are in three units called classes. The teachers and pupils stay together for six years, for grades five through ten. The teams teach all subjects, decide how they will be taught, determine the structure of the day, and decide on teacher assignments within the group. They hold regular team meetings. Although standards are consistent for all pupils, the teams decide how to help students meet those standards. Ratzki and Fisher report that although "teachers in Germany have not found it easy to come to terms with team structures" (p. 51), student and teacher experiences at the Holweide School have convinced nearly everyone that the method has merit.

In each of these examples all of the students and most of the staff members are assigned to specific groupings of students. However, some staff members, such as librarians, would remain in more traditional roles. Staff members who were assigned to groups of students frequently work in teams that use some level of integrated curriculum.

The continuum for organizing staff appears to move from some slight modification of the traditional system to almost complete staff integration in a new structure. As evident in the above discussion, the staff organization in the traditional system can allow some integration between subject areas. However, to move to the total integration of subjects, a more complete reorganization of staff might be necessary. Staff changes, which are made as a result of the school-within-a-school structure, can be accomplished in several ways. Some schools assign counselors and principals to the school-within-a-school without assigning teachers. Others assign teachers as well. It appears that the most complete method of staff integration within a school-within-a-school structure would be one in which most of the staff were assigned to a specific "school." Within this structure, the staff could work together to provide an integrated curriculum for a specific group of students.

Conclusion

New Designs for the Comprehensive High School should provide a strong community with focus and character, which pays attention to important learner process considerations as it supports the acquisition of identified learner outcomes. New Designs will require that thoughtful consideration be given to the organization of learners, learning settings, learning processes, learning time schedules, and the teaching staff.

Organizing Learners

High school models for organizing learners which meet student needs for connectedness and improved interpersonal relationships can be divided into two categories: (a) providing a small school within a whole school for some students, and (b) dividing the whole school into smaller schools for all students.

When a small school is provided for some students those students can be grouped based on interest, need, or ability. Most of the research recommends avoiding tracking or grouping by ability level. Models that fall into this category include school-within-a-school programs for at-risk students or special interest groups.

When a whole school is divided into small schools for all students, students can be vertically or horizontally heterogeneously grouped or grouped by interest. Examples of these structures are found in Paradigm High School, Woodland High School's career paths, Champlin Park High School's house plan, and Oxley's description of an ideal house plan.

Organizing the Learning Process

Many researchers believe that the complexity, confusion, and incoherence found in the typical high school curriculum structure should be eliminated. These concerns could be addressed through an integration of disciplines and an alignment of the learning processes—curriculum, instruction, and assessment. There are several methods for integrating curriculum, ranging from a simple connection of two topics in a subject to a total integration of all learning controlled by the learner. Some of the options for integration of curriculum include: (a) integrating discipline by discipline, (b) integrating learner outcomes by discipline, (c) organizing around learner outcomes without disciplines, or (d) clustering learning by theme problem or area of social development. Several researchers including Fogarty, Plihal, Johnson, Bentley, Morgaine, and Liang, Drake, and Beck, Copa, and Pease discussed processes for the integration of curriculum.

Even though the curriculum is integrated, it still seems necessary to departmentalize the high school. Suggestions for the new departments would include organization by: (a) career paths, (b) themes, (c) problems or concerns, or (d) learner outcomes. Before decisions are made regarding the integration of curriculum the following questions should probably be addressed: (a) Why is curriculum integration important?; (b) What should be integrated?; (c) Who should benefit from integration?; and (d) How should integration be fostered?

Organizing the Learning Setting

In addition to the learning opportunities provided in the home school, other educational institutions and the community can provide additional settings for learning opportunities.

Other educational organizations which provide added opportunities include colleges, area vocational schools, state schools, and area learning centers-alternative programs. Legislation that allows and/or promotes these opportunities includes the post-secondary option plan and the tech-prep legislation. The recognition that the home school may not fill the needs of all students has provided the impetus for the expansion of these options in other educational institutions.

Learning settings within the community are provided in apprenticeship programs, cooperative vocational education programs, school-supervised work experience, and community service learning. Learning in the community allows students to enter the real world environment, observe experts, and engage in actual community and work experiences.

Organizing Learning Time

Discussion and research regarding learning time focuses on the belief that learning should be the constant and time the variable. Some of the strategies that allow flexibility in time include the mastery learning/outcome-based education models, the block structure, the Copernican plan, and flexible scheduling. The mastery learning/outcome-based education model can be used in a traditional six- or seven-period day. The other strategies may require an adjustment in the traditional schedule. The block structure proposed for Champlin Park contains three ninety-minute periods. The Copernican plan includes two and three-hour blocks for integrated disciplines and shorter periods for other areas. The goal of the flexible learning time is to provide ample time for mastery of material by all students according to their needs.

Organizing the Staff

The organization of the staff needs to be adapted to reflect the needs which arise from providing an integrated curriculum for smaller groups of students. Although the organization of the staff can be adjusted within the traditional school structure, it may be more beneficial to integrate the staff in a new structure. This comprehensive integration of teaching staff in a new structure is evident in Paradigm High School and in the Holweide School in Cologne, Germany. Both structures assign a specific group of teachers to a group of students. These teachers and students could be identified and matched based on their needs or interests. Librarians, nurses, or other specialized staff may need to remain in traditional roles, but most of the staff could be assigned to a specific group of students. The staff could work together to provide the learning experiences that were best suited for the students with whom they were working.

This paper has focused on some specific models for organizing learners, learning process, learning settings, learning time, and staff. Each area is important to the organization of the entire school and each should be structured in a manner that allows optimum learning. Each will need to be considered in light of the decisions that are made about the organization of the other areas. Only when there is interaction among all of the organizational structures within the school will the new design for the comprehensive high school be complete.

Recommended Design Specifications Concerning Learning Organization

The following list of design specifications should be followed for the "New Designs for the Comprehensive High School":

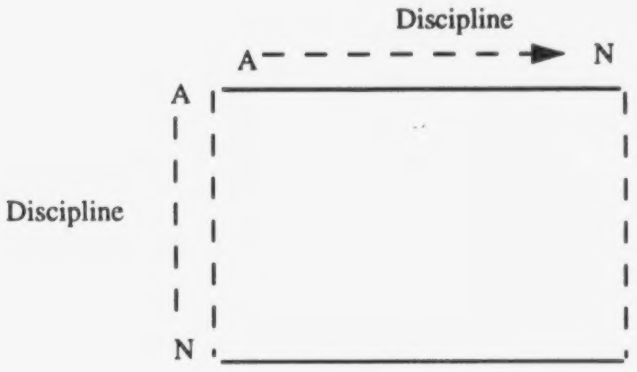
1. The organization of the school must be in alignment with the learner outcomes and the learning process. The components of the organization (i.e., students, learning process, setting, time, and staff) must be aligned among themselves.

2. The internal grouping of the student population in the high school should be restricted or limited in size in order to build community and maximize motivation and achievement. Several reports have indicated that student groups of approximately two hundred fifty to five hundred students would probably be small enough to allow students to feel connected and large enough to support a sound instructional program.

3. Curriculum organization should encourage integration of the separate discipline areas to reach the learner outcomes. It may by possible to organize curriculum by outcomes or by areas of social development. Some possible options for integrating curriculum include:

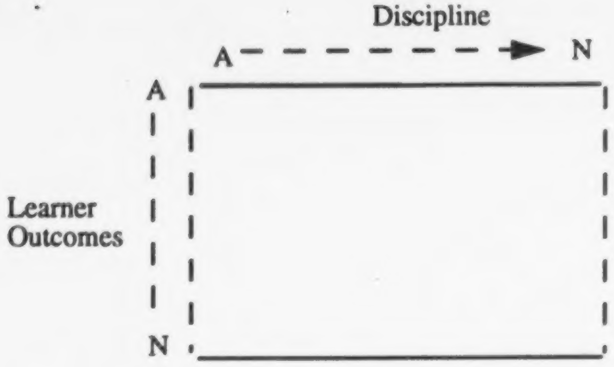
    a. Discipline by Discipline

Figure 3



b. Outcomes by Discipline

Figure 4



c. Learner Outcomes A ---------> N

(Eliminate departments for each discipline.)

d. Clustered using a theme, problem, or area of social development.

4. Scheduling of learning time should be flexible to encourage and support reaching learner outcomes through a variety of learning strategies, which allows a concentrated effort when appropriate.

5. The student population should be heterogeneously grouped. Homogeneous groupings by ability or age should be discouraged as counterproductive. Grouping by interest may be appropriate when it serves to meet learner, learning time, or learning process needs.

6. Each student should be involved in a planning process to reach learner outcomes in a way that is responsive to her/his needs and interests. This planning process should result in a flexible learning plan for each student, which is reviewed periodically.

7. The students should be provided with maximum opportunities to change direction and focus as they move toward completion of high school. The curriculum structure must allow all students to change their focus or study new areas of interest

whenever they desire without being restricted by prerequisites and/or curriculum tracks.

8. The curriculum and student organizational structure should allow each high school or high school grouping to have a recognizable, special character or focus that creates a feeling of community for students and increases student motivation and interest and, consequently, achievement.

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APPENDIX F

Learning Decision Making: Specifications to Guide Processes in Future Comprehensive High Schools

LEARNING DECISION MAKING: SPECIFICATIONS TO GUIDE PROCESSES IN FUTURE COMPREHENSIVE HIGH SCHOOLS

by
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LEARNING DECISION MAKING: SPECIFICATIONS TO GUIDE PROCESSES IN FUTURE COMPREHENSIVE HIGH SCHOOLS

The capacity to make decisions is an important part of being an educated person and should therefore be important to educators and to learners. Copa (1992) explains the significance of decision making this way: "Educated persons have practical intelligence which enables them to effectively handle the complexity and challenge of everyday life requiring clear attention to aims, context, and consequences of action (p. 11). This speaks to the need for the school to model what is being taught. It further suggests that school redesign groups need to consider the design specifications for the decision making process in the same disciplined way that they consider the other aspects of schooling such as learning process, the organization of learners, facilities, and costs. The decision making processes that are put into place should ultimately provide some structure for handling the day-to-day challenges and dilemmas that will be present in the new high school.

In the work of educating students in the comprehensive high school of the future, practical problems will arise. In order to resolve them, the people in the school community will need to find an approach to the problem and decide what should be done. Using the ideas of Brown (1977), Copa offers a meaning for practical problem:

> . . . the [practical] problem is created by a discrepancy between a desired state of affairs in places such as work or family life and society in general. Resolution requires a conceptual understanding of the desired state of affairs and well-being as a prerequisite to stating the problem phrased as "What should I (we) do about . . . ?" Practical problems require action for resolution—they cannot merely be studied. Since they have consequences for self and others, they have moral and aesthetic dimensions. (p. 79)

Copa's explanation of practical problems emphasizes the connection between problems and taking action. The problem-action connection is what distinguishes practical problems from theoretical problems, which can merely be studied. The purpose of this paper is to propose a set of design specifications for decision making processes in the future high school that will be fully aligned with the vision and the character of this school design.

There are three ways to think about decision making in public high schools. These ways are to think about the types of decisions that are made, the approaches to the decision-making process, and the principles underlying decision making. While a good deal can be written about the first two ways to think about decision making, they will only be touched-on lightly in this paper. The main purpose of this paper is to identify a set of principles—or design specifications—that should guide future decision-making processes and decisions in the comprehensive high school. This set of specifications, like the specifications developed in the other phases of this research project, suggests some key ideas for school design teams to discuss and possibly adapt to their own work.

Types of Decisions

Redesigning the high school is the act of making decisions. When the redesign decisions are analyzed as to type, several categories or types of decisions emerge. Bolman and Deal (1991) have studied the redesign experiences of educational and business organizations and they suggest one list of general categories for the types of decisions. The types are: (a) decisions on meaning (e.g., political, human, structural); (b) decisions on standards (e.g., external, customers, internal); (c) decisions on timing (e.g., when, for whom, how intensive); (d) decisions on resources (e.g., acquisition, use, distribution); (e) decisions about organization (e.g., which functions need tight standards, which functions will thrive on loose organization); and (f) decisions on motivation (e.g., buy-in, ownership, compliance, directive).

Other groups interested in redesigning the comprehensive high school may select different design structures that emphasize other types of decisions.. For example, the redesign committee for the fictional Franklin High School (Sizer, 1992) used the following sections in its final report: beliefs, the basic design, the curriculum, exhibitions, structure, and some practicalities. A second example comes from Grant (1988) who describes the redesign experience in an actual school—Hamilton High School. An improvement committee of Hamilton staff members made an effort to change the moral and intellectual life at Hamilton. An analysis of their meeting transcripts revealed that the dialogue unfolded in five stages: (a) testing of the need for change, (b) doubt and resistance, (c) emergence of belief that common action was possible, (d) development of shared meaning about desirable policies and practices, and (e) proposal of a strategy for school-wide change (p. 248). The five stages related to the types of decisions made by the Hamilton staff.

The decision in the New Designs project were brought under the discipline of the design-down process that is often associated with outcome-based education systems (Spady, 1988). In this project the decisions were divided into phases that were focused on learner outcomes, learning processes, learning organization and partnerships, learning staff, learning environment, and cost. These ideas are the substance of the complete collection of research and synthesis papers and the final report.

Approaches to Decision Making Process

The second way to think about decision making is to think about some of the approaches to decision-making that could possibly be used to make decisions in the redesigned high school. In order to do this, it is necessary to identify and study the approaches to decision making that are currently used in school organizations that came closest to the desired state of affairs for the ideal school that was envisioned. For example, excellent vocational schools were studied by Mitchell, Russell, and Benson (1989) and Wardlow, Swanson, and Migler (1992). They discovered that decisions often were made at the school site. In both studies, investigators noted that the school staff collaborated to make decision about issues that affected the quality of the programs.

Collaborative, Site-based Decision Making

Following the lead of the investigators mentioned above, the research staff reviewed currently-used decision-making models that are considered to be site-based and more collaborative in nature. Several decision-making processes were identified as useful for dealing with practical school problems; generally the most useful were described as decentralized.

The approaches to decision-making within the school are summarized in Table F.1 in a 2 x 2 matrix using two variables, staff and school, according to the possible intensity or inclusiveness of staff and school that typically is involved. For example, labor-management committees typically involve some teachers making group decisions, which affect one program or a portion of one school.

Table F.1

Decision-making Models Within the School

	Part of the school	The entire school
Some staff	Labor-management committees Teaching teams School-within-a-school	Charter schools Strategic planning Site-based management
All staff	Houses School-within-a-school Quality circles	Schools with community Shared decision-making Focused schools

When the project's research staff analyzed these models further, common steps or phases of the decision-making process were identified. As noted above, there was an emphasis on local decision making by team members. It was observed that participants usually gave attention to an aim or mission of the school. They moved their consideration next into the specific context and kept a focus on opportunities or alternatives, then to consequences, decision-making, implementation, and evaluation. Decision-making processes seemed to be based on practical reasoning.

Decision Making to Support Practical Reasoning

Copa explains that practical reasoning is particularly useful for solving practical problems such as those which arise in the course of everyday life, including school life. Practical reasoning is a systematic, reflective process requiring deliberation (often with others) and used a variety of kinds of knowledge—facts, interpretations, and values. Elements of practical reasoning include: (a) determining aims or desired state of affairs; (b) studying and interpreting contextual information; (c) developing alternative actions; (d) evaluating consequences; (e) making judgments; (f) taking actions; and (g) evaluating and monitoring action.

Practical reasoning requires attention to the resolution process and its results; both what and how things will be done. The process is relational because it involves open conversation with others. The process is normative because it seeks value standards resulting in the greatest good. If practical reasoning is used reflectively and systematically, it provides a framework and process that can successfully deal with the complexity and challenge of practical problems (p. 98-99).

Design Specifications of the Decision Making Process

The principles underlying decision-making are the third way that one could think about and organize the decision making in the high school. In the project, we have referred to a set of principles as *design specifications* . As used in the previous research and synthesis papers, design specifications refer to the guiding principles that influence the actions, and explain the underlying values and beliefs about each phase of the school redesign process. In this paper the Design Group proposes a set of eight design specifications that could guide future approaches to decision-making in the comprehensive high school.

Prior to proposing the specifications the Design Group and project staff studied and discussed the experiences of educators and business managers with organizational decision making. In organizations with a clear focus, decision-making occurs closer to problem situations, involved individuals, and resources. Decisions and processes tended to be timely and informed by adequate and accurate information. Data-rich environments enhanced the abilities of self-diagnosis and self-correction. At a meeting, the Group members discussed decision making as it was experienced in their schools and communities. They agreed that the above features described some characteristics of the desired decision-making processes for the New Designs school. But, they emphasized, the major objective should be *good* decisions. They pointed out that any number of poor decisions have been made using rational decision-making processes, and vice versa. Although *good* had many individual meanings, in this project the Design Group felt there was consensus that *good* begins with the words of the learner outcomes and reaches for the ideals represented by the school's signature. Good decisions and processes would help "educate students to live in a multi-cultural world, to face the challenge of reconciling differences and community, and to address what it means to have a voice in shaping one's future." (Giroux, p. 7).

After a good deal of discussion, the staff proposed eight design specifications that should guide decision-making processes in the New Designs high schools. They presumed that these specifications should make things better—not simply different—in three problem areas: (a) the mismatch between school and life, (b) the inequity of educational opportunities, and (c) the lack of organizational effectiveness.

Specification One: Decisions ought to be deeply rooted in and aligned with the vision of the school.

Being vision-driven gives consistency and coherence to decisions. A hazy vision or the multiple purposes of most public comprehensive high schools often are major barriers for those with hopes of restructuring. For this reason the Design Group recognized that New Designs schools need to have a signature and a set of learner outcomes that express specialness and articulate a purpose or purposes. The signature was to be a symbolic representation of that specialness.

In some localized circumstances, communities and educational staff have been able to operate public high schools with a specific purpose or focus. Recently, three authors reported that success is more likely to occur at higher levels for more students at focused high schools (Hill, Foster, and Gendler, 1990; Mitchell, Russell, and Benson, 1989; Crain, Heebner, and Si, 1992). Similar success is reported by some of the smaller pilot schools from the Southern Regional Education Board (SREB) State-Vocational Education Consortium that are attempting to advance the academic competencies of general and vocational students (Bottoms, 1991). Where educators and students have been able to be more clear about their purposes and are action-oriented, improved results are evident.

Specification Two: Decision making should begin at the site of learning; yet, it should be de-centered.

Schools with an apparent focus or character are inevitably managed at the site (Hill, Foster, and Gendler, 1990). Site-managed schools are "a good locus for improvement," according to Walberg and Lane (1989) who studied the effect of restructuring legislation on Chicago's public schools. They concluded that "At a time when state legislators, community reform groups, parents, and unions vie for control of education, the individual school may be the best place to reconcile competing claims with local conditions and preferences" (p. 16).

The concept of de-centered is taken from the psychological works of Jean Piaget. It implies the taking of perspectives of other people in the act of decision making or judgments as a presupposition to having reached the state of individual autonomy. One of the desired characteristics of New Designs staff is the ability to reflect de-centered positions in collaborative decision making (Lum, Copa, and Pease, 1992, p. 20).

The ideal of site-based, de-centered decision making is currently associated with high performance work places. High performance "is a way of organizing, or an organizational architecture, which brings together work, people, technology, and information in a manner that optimizes the congruence or *fit* among them in order to produce high performance, specifically in terms of the effective response to customer requirements and other environmental demands and opportunities" (Delta Consulting Group, Change/3 (no date), p. 31).

The argument for high performance school designs was developed by the National Center of Education and the Economy (1991) and reaffirmed by the second report of the Secretary's Commission on Achieving Necessary Skills (SCANS) (1992). The SCANS Commission reports:

> Clearly, all of us—as individuals, communities, employers, and a nation—have reached a point of decision. We can choose between raising productivity through a conscious effort to build an equitable, high-skills, high-wage future, or we can ignore the productivity side of the economic equation by settling for a low-skill, low-wage economy and its inevitable accompaniment, declining standards of living for most. We dare not choose badly. (p. 4)

In an address to the AFL-CIO about the key elements of high performance work organization, Marshall (1991) pointed out that decentralizing decisions to the point of contact with the actual work and customers is critical. He stated that a participative management system means that you promote horizontal cooperation and, most important of all, you decentralize decisions to the point of production or to the point of contact with the customers because that is where the work really gets done.

Site-managed, de-centered decision making processes are a key factor in organizations that are focused on total quality (TQ). Currently some schools are attempting to adapt fundamental TQ principles to education according to publications by Packer and Wirt (1989), Mt. Edgecumbe High School (1991), Schmidt and Finnigan (1992), Glasser (1991), and Governor's Quality Award (1992)). It is not the intent to summarize the influence of the total quality movement in this paper. The chapter "TQM in Government and Education" in Schmidt and Finnigan's book provides an up-to-date summary. Rather, it would seem that two ingredients are markers of initiatives where total quality processes resulted in constantly-improving products and services. These ingredients are: (a) a constancy of purpose for the improvement of products and services, and (b) a fundamental belief that the purpose is only achievable when the people in the organization take the perspective of the customer and then are directly invested in the decision making processes.

Specification Three: Decisions ought to make things better for all, not just different for some.

The design intentions are to somehow make "school work for all students" (Chion-Kenney, 1992, p. i), including those who currently benefit from inequitable distribution of school resources. Oakes and Lipton (1990) were inspired by John Dewey when they wrote *Making the Best of Schools*. Dewey, they explain, offered a practical and elegant guide for making decisions about what's best. "What the best and wisest [parents want for their] own child, that must the community want for all of its children" (p. xiv). Oakes and Lipton explained that they had a similar purpose in mind when they wrote their book:

> We argue that the same practices that make school better for any one child—your child—will make schooling better for all children. The best schools are those in which *all* children—not just a few—are believed to be capable, where all are offered rich learning opportunities, help to rigorous intellectual standards, and expected to succeed. To make the best of all schools, we need look no further than the schools we would want for our own children. (p. xi)

The Design Group's resolution that comprehensive high school be better for all students, not simply different for some, expresses some of the same hopefulness that comes through when business and labor leaders discuss high performance work systems and total quality management.

Specification Four: Decisions are the voice of staff, students, partners, and the broader community.

The decision-making process should recognize that achieving the purpose of better educational outcomes for all is only achievable when all learning partners can expect to speak to these purposes and expect to know that they've been heard. This is especially true for teacher who will bear the burden of reform and restructuring on a daily bases.

A school that encourages initiative and responsibility also alters the power roles of the staff, students, and community partners who work and learn at the school. Hill and Bonan (1991) mention several of these changes that occur when decision making involves more people from the school community: (a) superintendent encourages independent decision making, (b) school board loses the ability to micro-manage through the superintendent, (c) local teacher union leader becomes partner with superintendent, (d) principals and school-level steward change from confrontation to collaboration[1], (e) scope of teacher's union contract narrows as staff selection is done at the school level, (f) central office coordinators begin to advise, rather than control, (g) schools become more distinctive and parents have stronger grounds on which to choose their child's school, (h) private entrepreneurs or business-led civic groups will provide information, and (i) school staff will face stronger incentives to maintain parents' confidence and loyalty.

Specification Five: Decision making should be authoritative, not democratic; some decisions are better than others and authority is vested unequally.

Authority is that power to act, legitimated by the group, as a means of making progress toward their goals (Grant, 1988, p. 122). The unsettled schools of the 1970s may be remembered by some as a time of confused authority as they remember the decade's increased drug use, student-selected curriculum, open campus, and declining test scores. An administrator in the Atlanta area focus group commented that the 1980s was a time of restoring order in the high school and the 1990s will be a time to extend understanding of the concept of authority. The way in which authority is understood is likely to be transformed by the increased experience with and understanding of site-based decision making, high performance work systems, and total quality management principles by those who have supervisory responsibility in educational settings.

Sergiovanni (1992) describes five bases for educational supervisory authority and suggests two which may be more legitimate in high schools that intend to operate as learning communities. The five bases are bureaucratic, psychological, technical-rational, professional, and moral. Bureaucratic authority comes from rules and regulations.

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[1] The new partnership roles for labor and management are also foreseen by the prestigious Collective Bargaining Forum, a group of chief executive officers from major companies, international union presidents, and the presidents of the Industrial Union Department of the AFL-CIO and the National Association of Manufacturers. This group strongly encourages the move in this direction in their report (U.S. Department of Labor, 1991).

Psychological authority comes in the form of leadership, motivational technology, and human relations skills. Technical-rational authority uses the form of evidence derived from logic and scientific research. These three are used most frequently in schools that operate as processing plants; where teaching is thought to be an individual practice. He suggests that if the metaphor of schooling would be changed from that of a processing plant to a learning community, (such as the proposed New Designs environment), then teaching as a collective practice would emerge. Professional and moral authority would provide the bases for supervision. Professional authority comes in the form of informed and seasoned craft knowledge and personal expertness. Moral authority arises from widely-shared values, ideas, and ideals. Teachers are expected to respond to shared commitments and interdependence (pp. 204-205).

Hill, Foster, and Gendler (1990) suggest in a more provocative way that authority and decision making are important. "Focused schools are not democracies" (p. 39), they claim. Rather, focused schools are more like tight-loose organizations. By this the author means that the day-to-day decisions are made by open discussion and negotiation, but the prior agreement on the focus of the school constrains the arguments and provides the grounds for the resolutions of disagreements. The implicit understanding about focus, which staff and students share, establishes the boundaries of debate.

An investigation of five site-based managed high schools by Hill and Bonan (1991) discovered a similar tight-loose relationship between external universal standards and the internal school regulations. They say:

> In the long-term interests of students, schools cannot become laws unto themselves. They must somehow maintain universal standards that reflect a student's ability to succeed in both higher education and the labor market and society's need for competent, productive, and ethical citizens. The preservation of these standards in a system of lightly regulated schools is the central challenge of education reform. (p. 70)

Sizer's views (1992) would seem to agree with this specification. He states that "instead of the hierarchical bureaucracy, the school's decisions must be guided by a policy of unqualified delegated authority" (p. 172). This policy assumes that schools can maintain their own focus and integrity. He goes on to say that "expecting [schools] to be the same denies reality, and insisting that they be the same guarantees mediocrity " (p. 172).

With total quality management, experienced business and labor leaders emphasize the type of authoritative role that leaders must assume while working with an empowered work force. First, they say that the decision to focus on quality must be made by the top leadership. Next, authoritative leadership helps other employees decide to buy-in to the quality premise or look for other employment. Finally, the conflicts around resource allocations are resolved according to the purposes of the organization.

New Designs for the Comprehensive High School will have an agreed-upon signature and learner outcomes representing the values of equitable educational access and high achievement for all students. Decisions and decision-making processes that maintain the meaning of the signature should be authoritative. Within that tighter authority, the day-to-day decisions should be made by the stakeholders involved and be loosely organized.

Specification Six: Decision making should have access to the rich resources of all of the other partners.

Partnerships will be an essential part of the organization, learning process, and signature and learner outcomes of the New Designs prototypes. Here, once again, the discipline of the design-down process reinforces the fact that it is not possible to deliver on earlier specifications without partnerships. For example, learner outcomes include demonstrations of knowledge, skills, and abilities to contribute as a citizen to the community and the economic well-being of society. The curriculum would be integrated so that connections between disciplines were obvious. It should be useful in real life situations. Instruction in learning would emphasize experiential, contextual and collaborative processes. Assessment would measure achievement of standards based on the performances and virtues most valued in society.

Without real-life partners, it would be difficult to claim that learning is authentic, to benefit from the integration of academic and vocational education, or to experience value-conflicts that are so natural within a democracy. The rich resources of learning partners are needed: parents and families, businesses and labor, community organizations, elementary and post-secondary educational institutions, and other students and staff. The collaborative involvement of learning partnerships provides the venue for demonstrations and contributions, the real-life core of the integrated curriculum, the conditions for experiential learning, and the wider diversity of the community.

Decisions and decision-making processes should be organized and implemented in ways that partners can cooperate and collaborate. Partners that participate with a *want-to, want-to* motivation, based on a level of trust built up through past activities, seem most likely to cooperate and collaborate with the learning decisions of the schools.

Specification Seven: Decision making should be *yes-based* rather than *no-based;* assumes waivers or variances are already under local control or will be granted by the controlling element.

Comprehensive high schools try to serve multiple purposes and many constituent groups. One result is that the school tends to operate under many rules rather than a few guiding principles. These rules take on the power of the law—school boards are increasingly relying on their lawyers in decision-making. School administrators are expected to learn about the full scope of rules and regulations in their graduate studies. Campbell, Cunningham, Nystrand, and Usdan (1990) explain that public secondary schools are *open systems* that come under the influence of numerous insiders and outsiders. The control of the public high school includes both the legal and extra legal forces of influence. Control is exercised through decision-making activities that occur in the formal structures of school government, within the activities of interest groups, and with any other forces that appear to control the schools (p. 9). The authors suggest that there are seven control elements: (a) demographic (the number and character of adults and students in a particular school or school district, and the cultural traditions and values they hold); (b) legal (state and federal constitutions, statutes, regulations, and case law); (c) structural (governmental, official organization, and unofficial organizational arrangements); (d) ideational (arise from the concepts and values people hold); (e) knowledge (general and special knowledge, or expertise); (f) financial (resources or federal, state, and local money, and its use); and (g) network (the horizontal and vertical relationships of schools and school district to other agencies and organizations). The rules and comfortable traditions associated with each create inertia.

Schools that are relatively stable and enjoy the support of their communities often are most affected by this inertia and have many established traditions. New initiatives are often aborted before they've taken hold. *No* is more often the answer to new proposals than is *yes* simply because the status quo does not disturb the rules or the traditions. Community support and school conformity are correlated.

Exemplary schools may be on the cusp of conformity., but not always encouraged to continuously improve. Mitchell, Russell, & Benson (1989) noted that "it is ironic that schools which are not doing a good job are the ones which receive more money.... The schools that are exemplary struggle to maintain their momentum. As they become more successful and student outcomes improve, resources are taken away from them" (p. 194). This must change in the future.

The Design Group specified that the future New Designs comprehensive high schools will operate in an environment where site-based management has evolved somewhat and the recommendations for national standards have survived the opening rounds of political and legal challenges and are taking effect. In this case, the comprehensive high schools can be lightly regulated and conscious of some universal standards of achievement. The characteristics of the decisions and decision making will reflect this newer reality.

Specification Eight: Decisions are transitional between traditional and progressive ways of acting

The Design Group expects that comprehensive high schools in the future will continuously improve. Improvement will stimulate new ideas, activity, and partnerships. There will be a need for updated facilities and other structural changes as a result of new innovations. In other words, good high schools will be alive; they will grow and adapt to new opportunities.

This ability to survive and thrive in the transition from schools as they are today and should be tomorrow came up repeatedly in focus groups and discussions during each research phase. Themes related to the old way and the new way were evident in much of the theoretical writing about educational reform and business-labor restructuring. Key words, or themes, are summarized in Table F.2.

Table F.2
Traditional vs. Progressive Approaches to Decision Making.

The old way as:	The new way as:
neo-traditional	neo-progressive (Darling-Hammond & Sclan, 1992)
authoritative	participatory (most sources)
bureaucratic	professional/moral (Sergiovanni, 1992)
top down	site based (Sizer, Oakes)
external standards	internal values (Bolman & Deal)
administrative	focused (Hill, 1991)
low skill/low wage	high performance (Marshall, SCANS)

The Design Group expects that future decision making will fuse the best ideas from old ways and the new way. A site-base managed school has this opportunity.

The reality of moving to site-based, improvement-oriented decision making, according to the experienced education, business, and labor leaders on the design group, is that it is "a race without a finish line" In the meantime, schools are operating. Old and new decision-making processes are intricately related to each other. Each evolves into the other according to the local conditions and personnel. New Designs environment decisions and decision-making processes must be capable of going through transitions from old ways to a new way. Specifications for staff, the facilities, and the technology also call for the ability to make transitions, to be flexible, and to be able to take up new roles at the right times. The right time will be different in every situation.

Summary

The following eight design specifications should guide the decision-making processes in the comprehensive high school of the future.

1. Decisions ought to be deeply rooted in a purpose which is aligned with the vision of the school.

2. Decision making should begin at the site of learning; yet, it should be de-centered.

3. Decisions ought to make things better for all, not just different for some.

4. Decisions are the voice of staff, students, partners, and the broader community.

5. Decision making should still be authoritative, not democratic; some decisions are better than others and authority is vested unequally.

6. Decision making should have access to the rich resources of all of the other partners.

7. Decision making should be *yes-based* rather than *no-based*; assumes waivers or variances are already under local control or will be granted by the controlling element.

8. Decisions are transitional between traditional and progressive ways of acting.

Issues

The design specifications for decision-making process are the Design Group's judgment about the desired future in schools that restructure in the direction suggested in the research report. This judgment is open to question. Four issues to debate come to mind. Others need to be added.

1. What does the existence of a set of guiding principles (or design specifications) do for an organization? Will they serve to guide or to limit? The decision to design a focused high school may possibly provide a ceiling for those who might work and learn in the school if it excludes people whose vision surpasses the group's efforts? The community, students, and staff should be encouraged to listen for ,and applaud, better ideas and the otherness of decisions.

2. Have these specifications been conceived within a moral and justifiable ethic of work and learning? The Design Group has said that decision making should reach

for higher educational attainment for more learners; this might be thought of as a compoundment of improvement. But, there are risks associated with such a substantial goal. For example, educational attainment measured by test scores was linked to a class and racially-based organization of the learners and curriculum. In the designs, educational attainment measured by high performance may be linked to other ways of organization that could discriminate against certain groups of learners.

3. Are those challenged to establish new designs for the high school able to deal with the ups and downs of making the effort? Setting goals also sets up failure, and increasing productivity may lead to exploitation. In addition, higher standards leaves some behind, and apathy is only a short way away from empowerment.

4. The Design Group expects that graduates will be able to participate fully in a diverse, complex, and changing world environment. In light of the specification that the staff of the school should also represent individually and collectively the desired learner outcomes, can these decision-making specifications be defended in the global community and to individuals who normally would not openly challenge? It is also necessary to learn how to consider others who may be uncomfortable with notions of group participation, authority, recognition, and evaluation.

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APPENDIX G

Learning Partnerships: Lessons From Research Literature and Current Practice in Secondary Education

LEARNING PARTNERSHIPS: LESSONS FROM RESEARCH LITERATURE AND CURRENT PRACTICE IN SECONDARY EDUCATION

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LEARNING PARTNERSHIPS: LESSONS FROM RESEARCH LITERATURE AND CURRENT PRACTICE IN SECONDARY EDUCATION

Considering the comprehensiveness of the learner outcomes as they relate to the personal, academic, vocational, and social development of each learner, and the active, experiential, and engaging nature of the desired learning processes, it is necessary to look beyond the traditional school boundaries and bell schedules for catalysts and resources that will nurture hoped-for aims. Some of the catalysts and resources needed are naturally occurring in the community surrounding the high school. The surrounding community includes the home and the extended family, volunteer and governmental community-based organizations, businesses, elementary schools, junior high schools, and postsecondary educational institutions. These individuals and institutions are important resources and partners in education. The purpose of this paper is to summarize and briefly analyze selected research literature and descriptions of current practice about partnerships for the high school.

Bronfenbrenner (1991) states that "the informal education that takes place in the family is not merely a pleasant prelude, but rather a powerful prerequisite for success in formal education from the primary grades onward" (p. 4). During the high school years of education, the family provides for the basic needs of the adolescent, such as a safe and secure place to live, food, clothing, and medical services; supervises the adolescent; guides and supports the adolescent's development and advocates for the adolescent. If these basic and supportive needs of the adolescent are not met, it is difficult for learning to take place. In these respects, the family is an essential partner in the academic, personal, vocational, and social development of high school students.

The National Association of State Boards of Education (1990) points out that communities are in a position to help develop aspects of education that schools are unable to provide. For example, students can learn the elements of citizenship such as respect for others, community responsibility, and social commitment. Work experience, community service opportunities, and academic projects in community settings provide unique learning experiences beyond the classroom. Also, public health and social service agencies become very important in providing for the basic needs of students if they are not being met in the home.

Partnerships between high schools and businesses are important in providing learning experiences that are experiential and contextual; establishing a link between classroom learning and future employment opportunities; and sometimes funding educational initiatives. Whether in the classroom, in the community, or at a business site, experiential learning involves structuring activities so that students face real life situations that challenge them to master and apply new skills, take responsible action, and reflect on learning. Businesses also facilitate alternative means of assessment of learning that simulate real life circumstances, and that provide students and teachers with a way of measuring growth and structuring future learning experiences.

Elementary and junior high schools are important partners because they should provide students with basic academic, social, and problem solving skills as well as guidance in the selection of a high school program. Basic skills combined with informed choices about high school offerings are prerequisites for success. Partnerships between high schools and postsecondary educational institutions: (a) involve the coordination of curriculum at different levels, (b) provide for a smooth transition for students from secondary and postsecondary education, and (c) prepare students for specific jobs.

Partnerships with families, communities, businesses, and elementary, junior high school, and postsecondary educational institutions are an important part of a comprehensive, ecological approach to school reform and restructuring because they link schools to the greater community which is an important part of the learning environment. Davies (1991) describes this ecological approach as school restructuring that is "directly linked to family and community factors and that recognizes the interconnectedness between the education of children and health, housing, economic, and social conditions" (p. 6). Partnerships between these various sectors and institutions are important to the development of students; the achievement of learner outcomes; and the facilitation of learning processes that are active, experiential, and engaging.

The purpose of this paper is to draw from and synthesize the literature on partnerships between high schools and the broader community. The hope is to identify examples, ideas, issues, and design specifications, that will be useful in new designs for the comprehensive high school of the 21st century. This paper will focus on partnerships that are learner-centered and that recognize the ecological aspects of school structuring.

This paper is divided into four major sections. The first section will clarify the meaning of the concept of partnership, examine various frameworks for classifying partnerships, isolate some general characteristics of partnerships, and offer some historical perspectives on partnerships.

The second section will identify some of the potential partners with schools in education; and for each partnership, the reasons or basis for the partnership, some prototypes of effective partnerships, and the costs and benefits of the partnership.

The third section of this paper will offer an analysis of the paradigm shift that may be necessary for educators to move to collaborative relationships with partners in education. Based upon the reports, position papers, and research studies reviewed for this paper, the summary portion of this paper will highlight some of the defining characteristics of partnerships and identify some key concepts and issues important to consider in designing partnerships.

Meaning of Partnership

Today, partnerships between schools and the private sector are truly a national movement permeating the entire education system (U.S. Department of Education, 1988). It is difficult to understand the meaning of the concept of partnership, however, as there are a wide array of terms used to describe these relationships—many of which are used interchangeably. Several authors (Corrigan & Mobley, 1990; Lieberman, 1986; Maurice, 1984) point to the fact that although the concept of partnership may be difficult to define, and partnerships (especially those involving collaboration) are complex to implement, they are important to educational reform.

The U.S. Department of Education defines an educational partnership as any cooperative effort between schools and the private sector to improve the quality of education. Merenda (1989) contends that in the private sector this broad definition could encompass a wide range of partners from individuals or small companies to large multimedia corporations or government agencies. This definition points to the need to think of partnerships at the local, state, national, and international levels. Beyond the private sector, the potential for partnerships is even broader and extends to families, communities, elementary and junior high schools and postsecondary educational institutions. The structure and goals of these partnerships, Merenda suggests, are varied from one school and one partner to a group of partners nationwide with goals "including everything from reinforcing classroom instruction to improving employability skills, preventing drug abuse, providing internships for teachers, and providing summer employment opportunities for gifted or at-risk youth" (p. 5).

Dorothy Rich (1988) believes that the "real, best, and only way to improve education in this country is to combine the educational forces of home, school, and community" (p. 90). Rich describes the concept of partnership as the building of an infrastructure, which she feels up until now has been severely lacking. Developing an infrastructure, to Rich, means "connecting schools more formally to the rest of society—family, home, and environments outside of school in which children spend most of their time" (p. 92). This infrastructure could be built by launching a campaign about parents as educators, training teachers to work with families as partners, providing ways for families to help each other, involving senior citizens and the larger community in the children's learning process, and providing learning activities that families can use with their own children at home.

Another view of the concept of partnership is offered by Seeley (1985), who describes a partnership as "common effort toward common goals" (p. 65). Seeley contends that the following characteristics are essential to partnerships: (a) the relationship between partners is mutual; (b) the partners share an enterprise; (c) the partners, even though they may be strikingly different, each contribute particular talents, experiences, and perspectives; and (d) partners sometimes have different status within the relationship and control over the aspects of the work to be done.

Numerous terms have been used to describe the interrelationship between people or groups of people and are often used interchangeable with the term partnership. These terms include: cooperative, network, linkage, collaborative, consortium, coalition, and alliance. This use of multiple terms to describe partnerships can be problematic. When partners from different institutions or disciplines begin to work together, one of the first goals of that new partnership is often the clarification of terminology used by the partners.

To gain a better understanding of partnerships, three frameworks for classifying partnerships will be discussed. These three frameworks are: the Maurice framework (1984) which classifies partnerships by their degree or intensity; the Jones and Maloy model (1988) of partnership motivation; and the National Alliance of Business model (1987), which classifies partnerships by the level of involvement and the intensity/duration of that involvement.

Maurice recommends policy options for private sector involvement with vocational education that are also useful for the comprehensive high school and develops a framework to describe the meaning of some of the terms related to partnerships or what he calls "cooperative practices" (p. 8). Maurice places the "boundedness or maturity of cooperative relationships on a continuum based upon the degree or intensity of the relationship, ranging from no interaction to a symbiotic relationship" (p. 8). Maurice used the work of Ferrin and Arbeiter (1975) as the basis of the first four levels; he added the integrative level. These levels of association in cooperative relationships, as listed from lowest level of association (1) to highest level of association (5), are:

1. *Separation:* No information or resources are shared, and each organization maintains its own sphere of authority.
2. *Communication:* School seeks information and advice from industry, or vise versa, yet each still maintains separate spheres of authority.
3. *Cooperation:* Employer is involved in activities and provides resources.
4. *Collaboration:* Educational functions of both are considered; programs link the school and the workplace; no effort is made to modify either organization to accommodate the mutual objectives.
5. *Integrative:* Structures within cooperating organizations are modified to accommodate the objectives; a joint sphere of authority exists to accomplish the mutual objective; resources are merged; responsibility for success or failure is shared. (p. 8-9)

Maurice concludes from his study of the literature that "there is abundant cooperation between vocational education and the private sector; however, there is little collaboration and there are almost no relationships that can be described as integrative" (p. 81). Collaboration and integration represent the highest levels of cooperative maturity and many authors in the field have asserted that these levels of maturity are where we should direct our vision.

Jones and Maloy describe a model of motivations for participation in partnerships. The appearance in most partnerships of divergent motivations result in *obliged to*, *ought to*, and *want to* assumptions. According to Jones and Maloy, *obliged to* conveys top-down pressure for organizational collaboration, such as court orders, funding conditions, or state policy requirements. *Ought to* prevails where leaders sense their organizations will benefit from partnerships in some as yet undermined ways. *Want to* describes the responses of those members of organizations who anticipate personal and professional gains from their involvement in proposed joint activities (p. 90).

Varied motivations produce differing personal and organizational perceptions about reasons for cooperative action. The chart below produced by Jones and Maloy shows nine possible contexts for negotiating cooperative activities.

			Outsiders' Motivations	
		Obliged to	Ought to	Want to
Insiders' Motivations	Obliged to	Mandated meetings & pro forma activities	?	Conflicting communication & activities
	Ought to	?	Formal meetings & uncertain outcomes	?
	Want to	Conflicting communication & activities	?	Agreements on shared activities & outcomes

Jones and Maloy point out that the ideal situation is the *want to/want to* motivations for both partners. *Ought to/obliged to* negotiations are problematic and less often lead to positive programs (p. 90-91).

The National Alliance of Business suggests a model that categorizes partnerships by the level of involvement within the organization (e.g., boardroom or classroom) and the intensity/duration (e.g., systemic change or one-time donation) of that involvement. Their Business-Education Matrix was developed from data on thousands of partnerships in existence in this country. The National Alliance of Business cautions about the difficulty with categorizing partnerships because they are dynamic, developing relationships:

> Often the more sophisticated partnership efforts begin quite modestly, and do not aim initially at more than limited, project-specific activity. Many then build on a progression of success, increasing their credibility, investment and trust among the partners. Over time, they broaden their agendas and the numbers of partners involved, taking on increasingly difficult problems on many levels at once, becoming multi-dimensional. (p. 13)

The levels of business-education partnerships as categorized by the National Alliance of Business are:

1. Partners in policy: Broadest scope of involvement and investment to push for education as a priority, legislative changes, and coordination of resources. Requires longest term agenda, five years and beyond for follow-through activities. Highest return on investment.

2. Partners in systemic educational improvement: Broad scope investment in planning, implementing and evaluating school improvement efforts. Requires long-term agenda, three to five years and beyond. Large scale projects requiring broad coalitions, maximum coordination, re-combining, and channeling resources to solve the community's problems.

3. Partners in management: Partners share in planning, coordinating, implementing, and evaluating activities. Requires a one- to two-year commitment. Activities may be large, medium, or small in scale.

4. Partners in professional development: Activities are generally shorter term, usually small or medium in scale. Requires one month to one year commitment. May be implemented by an individual company with the schools or may be part of a formal program for professional development.

5. Partners in the classroom: Activities to support or supplement classroom experience. Generally requires minimal investment covering one or more semesters.

6. Partners in special services: Generally one time, short-term, project-specific activities affecting one school, one class, or one student. (pp. 10-11)

In this model of categorizing partnerships, the National Alliance of Business suggests that each level on the continuum, from the bottom (special services) to the top (policy), represents an increasing amount of business involvement and investment and an increasing impact on the total high school system.

This section of the paper has attempted to clarify the meaning of the concept of partnership and, by presenting various models for categorizing partnerships, to show the wide variety of cooperative relationships that can be developed and implemented in education. The concept of partnership is difficult to define. However, from the literature review, the following general characteristics can guide the development of partnerships for the comprehensive high school. Partnerships are interrelationships between people or organizations in which there is: (a) some level of cooperative effort; (b) a shared goal, vision, or enterprise; (c) mutual respect and trust among partners; (d) the partners each contribute particular talents, experiences, perspectives, and resources to the partnership; (e) there is shared power in the partnership; and (f) there is shared accountability for what the partnership is attempting to accomplish. Partnerships are dynamic, growing, and evolving relationships. They usually start small and develop over time to more complex, sometimes multidimensional relationships. Partnerships are an important part of a comprehensive, ecological approach to school reform and restructuring because they link schools to the greater community, which is an important part of the learning environment.

Historical Perspectives

This section of the paper will examine the history of the relationship between secondary schools and families, communities, businesses, and postsecondary institutions. An historical perspective of partnerships in education can give some clues as to the barriers that might be experienced in movement to collaborative work. It can also offer insights into the types of partnerships that have been effective in the past and how those efforts can be expanded upon now and into the future.

Historic Perspective of Family/Community Involvement in Education

Historically, there has not been clear distinction made regarding the contributions to education made as a result of partnerships between schools and families and between schools and communities. In nineteenth-century rural America, children acquired much of their moral, vocational, and academic learning from families and neighbors. Schools supplied only part of the education that a community provided. Tyack, (1974), notes that a child growing up in such a rural community could see work-family-religion-recreation-schools as an organically related system of human relationships. Tyack goes on to say that schools in such environments were often the focus of people's lives outside the home. Most rural patrons had little doubt that the school was theirs to control, and not the property of the professional educator. At that time, teachers were often friends or kin with those they taught, or they boarded in the homes of area families. Urban families and minorities did not experience this type of symbiotic relationship with schools. However, until after World War II, when consolidation would speed the demise of the one-room schoolhouse, the more symbiotic relationship persisted in rural America (Olson, 1990).

By the beginning of the 1890s, a far different model was developing in large urban districts. Olson points to the fact that "reformers asserted that industrialization and a growing immigrant population required a new kind of schooling: one that was more standardized, more bureaucratic, and run by professionals" (p. 19). As the organization of urban schools shifted, the locus of power moved with it: from the control of laypeople—including parents—to that of professional educators (Olson).

Some of the shift to a more institutionalized model of education was mandated by legislation. For example, in 1917 the shortage of skilled workers was one of the reasons for the passage of the Smith-Hughes Act that authorized the development of vocational schools. In another example, pre-schools were formed after television brought to the public's attention the inadequacy of some homes to provide the conditions thought essential for academic achievement.

With the professionalization of teaching and administration in the 1920s, 1930s, and 1940s, the feeling developed that professionals should make the decisions about what education was best. By the 1950s, Olson continues, it was widely accepted that schools could do it all and that parents and community were no longer needed to educate children. Olson goes on to say that "the 1960s brought a revival of parent advocacy with the federally funded Title I program, however, the civil-rights conflicts of the 1960s also served to increase the distance between many schools and communities" (p. 19). In more recent years, efforts to shift key decisions about schooling to the state and district levels—and away from individual schools—have further alienated communities and families.

Today, "the relationships between most schools and parents range from polite but not intimate to wary and distrusting" (Olson, p. 18). Because of changes in the American family structure, stresses on the family, and the nature of the problems facing communities and schools, there is a renewed interest in schools, families, and communities working together as partners in education. But this will require a fundamental reorientation on the part of educators and parents and an understanding of prevailing attitudes that have developed through history.

Historic Perspective of Business Involvement in Education

Partnerships between business and education have an historic dimension that should be seriously considered. In the broadest sense, the master-apprentice relationship of mid-century European guilds is a legitimate ancestor. The master-craftsperson was responsible to teach a craft, a work ethic, and basic literacy. American apprentice relationships, whether on farms or in the trades, withered away by the 1880s; the diminished role affected by democratic values, industrialization, and resistance from worker's groups. Without this source of cheap, qualified labor, industrialists looked to farm families for surplus workers.

The industry-education partnerships in the New England mill towns from 1810-1830 existed for the young women workers who came to live and work at the mills until they returned home to marry. Life at the mill town was similar to a boarding school. Education was encouraged through study groups, literary forums, church attendance, and physical exercise (Eurich, 1985).

Industrialization stimulated the growth of large population centers and scientific farming. The family farm was transformed into a business enterprise as it produced food for urban residents. New links between education and farm prosperity were encouraged by advocates such as the National Grange, and editors "Uncle Henry" Wallace, and former Wisconsin governor William Hoard. Legislation was passed at state and federal levels to provide scientific farming education for the agricultural classes (Cremin, 1964).

The Mechanics Institute of Boston, the Franklin Institute in Philadelphia, and the manual training concept were early nineteenth century answers to the needs by the young men in workers' groups for education in sciences, mechanics, and invention. The institutes were good efforts in the ideals of general and industrial education but could not supply the numbers of educated workers demanded by industry. Expanding free public education to include industrial education, it was argued, would achieve two goals "the multiplying factories with their increasing technology needed workers with greater knowledge and skill, and workers with that education would be in a better position to deal with an increasingly oppressive factory system" (Eurich, p. 31).

One can look to Russia for the genesis of the industry-education partnership, Cremin says. The Russians displayed their system of technical education at the Philadelphia Centennial Exposition of 1876. "Businessmen from New York, St. Louis, and Chicago who had seen the display began to sharply criticize the narrow intellectual emphasis in the American secondary school program, and demanded a central place for manual training and vocational education" (p. 21).

On display in the exhibit cases were the drawings, models, and tools illustrating the Della Vos methods. The Della Vos method organized instruction shops in each of the useful trades. In Russia, instruction shops all but eliminated the larger and less efficient construction shops. At that point in history, American education had not yet worked out pedagogy that would successfully tie together education and national progress in industry. The new method was a new beginning. "American education was never the same thereafter," according to Cremin (p. 21).

The links between business and education grew in number and complexity in the years leading up to the passage of the Smith-Hughes Act in 1917. The influence of organized labor was also very important in the exchanges that put vocational education in the public high school, and in essence, established the comprehensive high school. The Act was the culminating event at the end of two decades of effort from business, labor, and social leaders to add an industrial-vocational dimension to the curriculum.

The Corporation School movement provided another example of business-education interface in the years surrounding the 1917 Smith-Hughes Act. Beginning as early as 1872, corporation schools were established by many of the large and dominant corporations, particularly in the eastern states and then western states of Illinois, Indiana, Missouri, and Ohio. The corporations provided a range of cultural, general, and industrial lessons to employees who had graduated or left school. The National Association of Corporation Schools, organized in 1913 by thirty-five of the largest corporations had a standing committee on public education for the purposes of studying and influencing the public school curriculum toward work ready graduates, particularly when it came to retail sales and factory apprenticeships.

In 1918, Albert Beatty of the Carnegie Institute of Technology and the Director of Education for the American Milling Co., published the results of a two-year study of corporation schools in which he recommended that the *cooperation school* be the desired form for vocational education within the guidelines of democracy.

Cooperation schools would bring together the strengths of public education (e.g., classroom management, definiteness of aim, assignment of lessons, breadth of view, development of culture, and recitation technique) and the superiority of the corporation school (e.g.,. responsiveness of class, mental discipline, and class attitude toward learning). "Cooperation schools would also take advantage of the inherent advantages of the corporation school in the relation of employer and employee, pecuniary interest, shop situation, and real problems" (p. 144). Beatty further concluded that the corporation school could not become universal because it reached only a small number of industrial workers, and business reasons required the corporation school to select the best and to eliminate the inferior applicants. Selectivity of the best students was the one feature that had arrayed the American Federation of Labor against any form of privately controlled vocational schools (Cremin, 1964).

In a resource bulletin (Spring, 1987) from the National Center on Effective Secondary Schools, Turnbaugh suggests that by the 1930s and early 1940s, schools and businesses were united by the needs for job training, the New Deal youth agencies that attempted to mediate the effects of the Depression, and the patriotism surrounding the effort to win World War II. She concludes that today the use of high schools to prepare youth for jobs in seldom questioned, but a shifting economy has changed the significance of this trend. The shifting economy of the 1980s and 1990s has once again brought the conversation between business and education loudly to the public ear.

Historic Perspective of Secondary/Postsecondary Partnerships

Secondary-postsecondary articulation and partnerships are not new concepts. Robertson-Smith (1990) points out that as early as the 1920s a system was established in southern California to provide a smooth transition for students in grades eleven to fourteen. The seventh yearbook of the National Education Association, published in 1929, was completely devoted to a discussion of articulation among educational institutions at all levels; and in 1947 "the need to provide easier transition from high school to college" was underscored in the report of the President's Commission on Higher Education (Opachinch and Linkz, 1974, p. 1).

Articulated academic programs and credit received national attention in the 1950s with the Advanced Placement (AP) Program and the College Level Examination Board (CLEP). The AP program allowed secondary students to take college-level foundation courses while still in high school; they received advanced standing once they matriculated to a postsecondary institution. CLEP examinations allowed students to test out of beginning level courses at the postsecondary institutions (Robertson-Smith).

Articulation efforts began to lag behind need in the 1960s. According to Robertson-Smith, large numbers of community and technical colleges were being established across the nation, and equally large numbers of students were faced with the need to transfer credits into colleges and universities while keeping their existing credits intact. During the 1970s, a number of states began to establish statewide policies and procedures for articulation. Following a survey of state advisory councils, the National Advisory Council on Vocational Education reported that by 1976 almost forty percent of the states responding had planned articulation programs between secondary and postsecondary levels of education.

By 1990, ten states had transfer agreements affecting all of higher education, and thirty of the fifty states had some credit transfer policies in place. The remaining twenty states had numerous individual agreements in force between or among individual institutions or segments of higher education. Tech-prep, one form of secondary-postsecondary partnership "is built upon the theories and concepts of articulation that date to the mid-sixties and seventies" (Hoerner, 1991, p. 18).

The brief history of partnerships in education reveals that prior to the 1900s in rural America work-family-religion-recreation-schools were seen as an organically related system of human relationships. Families and communities were very much involved in educating the children. In the early 1900s industrialization and the professionalization of teaching and administration moved the locus of control for education from laypeople—including parents—to that of professional educators. Businesses have a long history of partnerships with schools in the forms of apprenticeships and corporation schools. These earlier models are prototypes for business-education partnerships today. Secondary-postsecondary articulation partnerships began as early as 1920. The Advanced Placement (AP) Program and the College Level Examination Board (CLEP) developed in the 1950s were the start of many of the secondary-postsecondary partnerships implemented today.

Potential Partners in Education

This section of this paper will identify some of the potential external and internal partners, who with schools, could contribute significantly to the comprehensive personal, academic, vocational, and social development of high school students. External partners come from outside the traditional school organization. Internal partners come from within the school organization. All of the partners mentioned help engage students in active, experiential, and contextual learning processes and assessments. Needless to say, this is not an exhaustive sampling of potential partners in education. For each of the potential partners identified, the following will be addressed: (a) the need for a partnership, (b) some prototypes of effective partnerships, and (c) the costs and benefits of partnership.

Davies (1991) points out that a student's world is composed of multiple institutions and sectors and that all parts of this world influence the development of the student. These influences are more likely to be strong and positive when there is communication and cooperation in the student's interest among the many parts. This ecological view is embodied in the African proverb: "It takes the whole village to educate the child." If one takes into account this ecological view of the student's world, then families, communities, businesses, elementary schools, junior high schools, postsecondary educational institutions, and others from within the school are all potential partners in education.

Parents/Families as Partners in Education at the High School Level

Cavazos (1989) addresses the urgent need to equip our children for success in school through the active participation of their parents. As an aspect of education reform efforts nationwide, parent involvement takes several forms: (a) involvement can occur within the context of the home, as parents and other family members encourage and help their children and hold a positive attitude toward learning in the home; (b) in the roles parents take in relationship to the school and school system, ranging from volunteer work in the classroom to school governance; and (c) by the parents' choice of the schools their children will attend.

Researchers are beginning to examine the effects of various types of parental involvement in education. Parental involvement during the preschool years of child's development has been associated with reading readiness and interpersonal skill development (Collins, 1984; Tivnan & Pierson, 1982). The positive effects of parental involvement on elementary students' reading and mathematics achievement have been well documented (Epstein, 1984). A few studies have focused on the effects of various types of parental involvement on the grades of high school students (Eagle, 1989; Fehrman, Keith, & Reimers, 1987). However, much needs to be learned about what types of parent involvement are developmentally appropriate and effective at the high school level. Parents are important as ever to the social and academic success of their high school students, but their role necessarily becomes different as their child grows older (Henderson, Marburger, & Ooms, 1986).

An understanding of the unique needs and issues of the older adolescent (ages sixteen to nineteen) is important to developing parent-student-educator partnership strategies that have a chance of success. Parent and educator in-service or pre-service training to help develop effective partnerships at the senior high school level need to involve specific information about the older adolescent's developmental stage and how the dynamics of the family system differ at this stage. A profile of general characteristics and concerns of the late adolescent stage of development follows.

Erickson (1968) states that in no other stage of the life cycle is the promise of finding oneself and the threat of losing oneself so closely allied as they are in late adolescence. During the entire adolescent stage, identity formation is an important issue; however, in late adolescence, youth become better equipped to perceive their own uniqueness and come to grips with the way they are. Elkind (1984) believes that we "must not deny young people the time, support, and guidance they need to arrive at an integrated definition of self" (p. 21).

At the adolescent stage, several sources on adolescent development (Benson, 1990; Elkind; Mitchell, 1986) stress the importance of all adolescents having someone, usually an adult, who believes in them and appreciates their unique strengths. These mentors or special figures accept the adolescents for who they are. In fact, Rumburger (1987) suggests that the most important factor in preventing students from dropping out of high school is if their psychological need for someone to care about them individually is met.

Older adolescents develop their own private and personal standards by which they judge their self-importance (Mitchell, 1986). Self-importance becomes more strongly linked with competence; therefore, they feel important when they can do something important. Older adolescents identify themselves in terms of their involvement. The need for meaningful school and community involvements are very important to the older adolescent's development. Other needs of older adolescents are: (a) a desire and freedom to exercise their ability to make choices, (b) a value or system of beliefs to which they can be committed, (c) the desire for status in the adult world, and (d) the selection and preparation for an occupation (Mitchell).

As older adolescents are adjusting and responding to their unique needs and issues, the family system and school environment should be cognizant of these needs. The family system, including parents, grandparents, older children, and friends of the family, can provide much needed support to high school students to help them achieve social, academic, vocational, and personal goals. Small and Eastman (1991) list the following as developmentally appropriate involvement of the family with the adolescent:

1. Meeting basic needs such as a safe and secure place to live, adequate food and nutrition, clothing, and the ability to access medical, dental, and mental health services.

> 2. Monitoring of the adolescent involving supervision and awareness of the adolescent's behavior and whereabouts. This should not be done in an overly intrusive way, but parents should show an active interest in the lives of their adolescents, and a willingness to enforce rules and raise issues that concern them. Parenting style has been shown to have a relation to adolescent school performance (Dornbusch, Ritter, Lederman, Roberts, & Fraleigh, 1987).
>
> 3. Teaching self-protection skills such as dealing with emergencies at home, dealing with peer pressure, and certain streetwise skills.
>
> 4. Guiding and supporting development, including setting limits, providing reinforcements and sanctions, communicating, and modeling the behaviors and values that are important to adolescents.
>
> 5. Advocating and supporting for their adolescents as a way of linking to experts, individuals, groups, and institutions. This function is particularly important because of the greater involvement of adolescents in institutions of the larger community, the multitude of choices contemporary teens need to make about academic issues and further vocations, and their precarious legal status. (p. 457)

Henderson et al. list the following as the most important functions of the family system in helping the high school student experience success: (a) continued monitoring and support of the adolescent's academic progress, (b) preparing for transition to work, and (c) guiding the social world of adolescents. If parents are to monitor the adolescent's school success, they need to be kept informed of school progress. Henderson et al. suggest that to make home-school communication easier, some schools are successfully creating administratively smaller units within the school, maintaining continuity of counselors throughout the high school years, and creating teams of teachers to teach a specific group of students for more than one year. Also, some high schools schedule periods when teams of teachers can regularly meet to avoid the fragmentation of a piecemeal progress report on any given student.

Technology is a valuable tool in communication with parents. Several schools nationwide have telephones supported by computer technology in place that allow parents or students to call in at any time of the day or night and receive information via recorded messages from any teacher about daily assignments, tests, and special events to be held such as SAT and ACT testing dates and sporting events. This allows the family to initiate contact with the school that is informative and non-threatening (Bausch, 1989).

Dorothy Rich, founder of the Home and School Institute in Washington, DC, believes that all families across all economic and racial lines care about their children and their schooling. However, Rich (1988a) contends that many families lack the help they need to turn their love into practical, school-supportive action at home. Rich emphasizes the ability of parents to use the curriculum of the home to develop the following Mega Skills in their children in age-appropriate ways: confidence, motivation, effort, responsibility, initiative, perseverance, caring, and teamwork. These skills, Rich believes, are foundational to the school success and later occupational success of all students.

In light of the fact that the world of work is so familiar to parents, schools are beginning to solicit the help of parents to accomplish the goal of preparing high school students for the transition to work. Henderson et al. explain that some parents have a broad exposure to the variety of jobs in the community and know where the job openings are occurring. Parents of high school students have in several schools been willing to share some of their time on a volunteer basis to come to school and discuss their own job situations, to take young students as interns for a brief period, or to act as volunteer counselors and mentors to another parent's teenager. These incentives engage the student, help to make the learning in the classroom more relevant, and provide important links to the greater community (Karls, 1992).

There are a variety of roles parents and other family members are performing in the schools. In Chicago, there is a parent-led council at each school that is instrumental in developing school improvement plans, and New York City is beginning to seek greater parental involvement in running some schools (Bacon, 1990).

Parent involvement in school governance and decision making is meeting the most resistance from the administration and staff of the schools. Parent involvement in governance and decision making is perceived by some administrators and teachers as "a threat to the status quo within the schools and to the authority of educators" (Cavazos, p. 4). Educators who feel this way, limit contact with parents and fail to share information with them. They take a narrow view of the role of parents by insisting that only professional educators know what is best for their children, Cavazos says.

A prototype for involvement of parents in school governance and decision making is the *Comer process*, the model designed by James Comer, a professor of sociology at the University of Chicago. This process was first implemented in New Haven, Connecticut in 1968, and since then has been implemented in several sights throughout the country. Three components are essential to the Comer model: (a) the school planning and management team, a representative governance, and management group that includes parents; (b) the student-staff services team, which focuses on prevention of children's behavior problems and support for teachers dealing with children in crisis; and (c) parent involvement (McAllister Swap, 1990). In the Comer model, according to McAllister Swap, the emphasis on equity, shared power, accountability, and experimentation seems to sustain energy and ownership among the partners.

The National Association of School Boards of Education (NASBE) offers several examples of how parents have organized to become advocates for improving policies and resources for all schools in the district: (a) in Chicago, Designs for Change, Inc., a parent advocacy group, was instrumental in formulating legislation that restructured the public schools in that city; (b) in Washington, DC, Parents United has been extremely active in advocating for increased education spending and serves as a vocal forum for parents' concerns; and (c) early childhood programs such as Project Head Start have a record of success in involving parents in key personnel, program, and budget decisions. //

Allowing parents to choose which school their students will attend is also thought to increase parent involvement in children's learning from the start, as parents learn what different schools have to offer (Cavazos; Nathan, 1989). According to Bacon, as of July 1990 eight states, led by Minnesota, had adopted plans that allow parents to register their students in any school in the state. Proponents of school choice feel it increases the support, responsibility, and accountability of parents in the education process.

The need for families to participate as partners in education with schools is clear. The examples given above are but a few strategies that have been successfully implemented at the high school level. The benefits of involving families as partners in education are summarized by Scott-Jones (1988): Family participation "provides knowledge about the student not otherwise available to school personnel; infuses the family's values and background into the school; encourages students to believe that school is important to their families and that families belong to schools; and, results in teachers' feeling support from families for the school's goals" (p. 67).

NASBE lists the following specifications as important to any successful parent/family involvement initiatives:

1. Parents and schools must maintain effective lines of communication. Effective communication should be predominantly positive, frequent, and two-way.

2. School and family connections must take a developmental course and be sensitive to the students' development and stage of schooling.

3. Involvement initiatives must be sensitive and respectful of the diversity of families, including one-parent homes, reconstituted or blended families, foster homes, extended families, and a variety of other family situations.

4. Family involvement strategies require site specific development and leadership tailored to the nature of the school, its administrator, staff, community, and its families.

5. All involvement initiatives must recognize the need for training and time commitments. (pp. 6-8)

The major cost to schools of implementing effective family involvement strategies is time. Coordinated planning, collaborative work, and increased contact with families by phone, mail, or in person all take time. Schools may have to take a non-traditional approach to scheduling to allow for more family participation. The initial monetary cost of installing technology that increases contact and communication with the home is quite expensive and the systems need to be maintained.

A transition to a partnership relationship with families may involve pre-service and in-service training for both teachers and parents. Teachers and parents should listen to each other and clarify their respective needs, goals, and perceptions about their role in a partnership. Working with parents requires different skills than working with students. Therefore, teachers and other school personnel require training in how to work with and understand the parents of their students. Likewise, parents may need training and guidance from teachers on how to effectively participate in their child's education. NASBE contends that "recognizing the substantial changes that are required in staff skills and school routines and practices, planning for successful parent/family involvement should assume a three-year time period for full implementation" (p. 8).

The attitude of school staff is a deciding factor in whether parents are productive partners with the school—not the parents' education, race, or the socioeconomic background of the families (Epstein, 1983; Moles, 1990). All families have strengths to share with schools. Both schools and families benefit from quality family involvement programs.

The Community as a Partner in Education at the High School Level

The community at-large, including any number of agencies, institutions, and citizens, is a potential partner with schools in education. Goodlad (1984) states that a very significant part of the academic/intellectual program of schools must be realized through experiences in the larger community. One of the central purposes of education is to help students learn how to be responsible, contributing members of the communities in which they live. The challenge for schools is to join forces with the community in order to provide opportunities for all students to learn responsibility and citizenship (NASBE).

Although there is not extensive research in the area of school-community partnerships, many teachers, administrators, and parents consistently testify to the positive impact of community involvement in schools (NASBE). Bryant (1986) makes the following statement concerning the efficacy of community involvement and the difficulty of implementing it: "A direct correlation has been shown between the motivation of a child to learn and the relevance of the learning process to life in the larger community outside the school, but it has been difficult to find practical methods of directly involving the community in public day-school programs" (p. 25).

Boo and Docker (1985) also comment on the need and importance of community-school partnerships:

> Partnerships between schools and community agencies, whether public or private, can enrich the regular school curriculum. Community partnerships open up new worlds and new possibilities for youngsters, helping them see the connection between learning and living. Partnerships also develop community appreciation and support for the work of public educators. (p. 12)

Given the myriad of possible partnerships, the prototypes offered as examples here are selected to illustrate ways in which schools and communities can cooperate to improve education, including: (a) communities becoming involved in the day to day running of the schools by making available their time, experiences, and resources to the school; (b) communities allowing students to become actively involved in community life; (c) communities facilitating the coordination of needed services to students; and (d) schools becoming community centers for the entire community (NASBE).

Relatively simple and frequent types of support traditionally provided to schools by communities are guest speakers, special demonstrations, and allowing the use of facilities and equipment. These are important forms of cooperation, but do not involve the higher levels of partnership, including joint goals and planning, as in collaboration.

As mentioned earlier, important to the stage of late adolescence is the need for a significant adult or mentor to care about each student individually and to appreciate her/his unique talents. Mentorships may involve students, faculty, or administrators working with business, higher education, government, community-based organizations, or non-profit agencies. "Mentors provide students or school personnel with significant contact in the community that is not available to them in the school setting" (NASBE, p. 12).

Student mentorships generally involve a match between the student and a member of the community. A mentor should provide a positive role model for the student. An example is Mentors, Inc. in Washington, DC. The program is designed to keep average students on track rather than to assist students who are experiencing academic difficulty or behavior problems. Mentors have weekly phone contact with the students, and see students personally at least once a month. The program is effective in giving students a sense that people outside the school care about their success.

Another type of mentoring is mentorships for teachers. These mentorships involve businesses, colleges, or universities sponsoring teachers in their professional growth and development. One example of a high school- university partnership is at Baylor College of Medicine. This partnership has contributed to the renewed confidence and enthusiasm of the teachers in the Houston public high schools. The project staff members found that the mentoring experience not only improved the teachers' mathematics and science teaching skills, but also increased their self respect and renewed their enthusiasm for teaching (NASBE, p. 13).

The Search Institute in Minneapolis, Minnesota conducted a study summarizing extensive data from more than forty-six thousand public school students in grades six through twelve. This study sought to determine the extent to which several internal and external assets affected the positive development of teenagers (Benson, 1990). *External assets* include such factors as positive relationships in families, friendship groups, schools and community, while *internal assets* reflect the teenagers personal convictions, values, and attitudes. The study suggests that the kind of help teenagers need most in growing up is usually supplied by a combination of family and surrounding community. The family provides rules, discipline, encouragement, and caring. The community makes available such things as educational experiences, community rules and expectations, friends, recreational experiences, and spiritual nurturance.

The Search Institute Study points out the importance of what is called prosocial behavior to a teenager's positive development. Prosocial behaviors cover a wide range of human actions—helping people in distress, donating time or energy to volunteer service organizations, attempting to reverse political, economic, and social injustice or inequality. The common thread among prosocial behaviors is the desire or intent to promote the welfare of others.

The importance of involving high school students in prosocial behaviors has spurred a variety of community service initiatives. NASBE states that "student community service is fast becoming a significant topic of national education policy discussion and that this nascent effort to promote students serving their communities is a positive and potentially powerful tool in integrating schools and communities" (p. 13).

The National Youth Leadership Council can be helpful in identifying curricula and other resources to promote youth service in schools and community organizations. Churches and community groups often set aside time and make the connections to have teens do something to help others, such as painting a house, visiting the elderly, and cleaning up river beds. The National Peer Helpers Association has also instituted peer counseling training programs. This is a means of youth developing social competencies and being of service to other youth.

NASBE contends that schools are a place where social service organizations should feel at home. In several cities, such as Boston, New York, and Baltimore, the local Boys and Girls Clubs are working closely with schools to develop dropout prevention programs, mentoring relationships, and career awareness projects (NASBE).

Many successful youth service programs have been implemented and are being replicated and expanded to new settings. However, any youth service program has to keep the needs of the respective community in mind and also consider that one kind of program cannot apply to all students and all schools.

The emotional and physical wellbeing of students is essential to achievement of all other educational outcomes. Interagency partnerships between schools and human service providers are being forged to implement comprehensive prevention, treatment, and support services that students and their families need. The Education and Human Services Consortium (EHSC, 1991), offers several examples of how schools in collaboration with human service providers can improve the accessibility and comprehensiveness of services to students. Many of the efforts nationwide involve co-location of services and a realignment of resources to better meet the needs of students. For example, in 1988 the Kentucky Integrated Delivery System (KIDS) initiative began as a joint venture between the State Department of Education and the Governor's Cabinet of Human Services. Its purpose is to help local agencies develop mechanisms to coordinate existing services to make the services of social workers, mental health counselors, public health professionals, and others available at school sites. No new funds were attached to this venture. The various agencies and the school personnel have common goals, a shared vision, shared planning, and are sharing some resources, making this a collaborative effort.

Two other examples of collaboration efforts between schools and human service providers are the Community School Program (CSP) in New York and the Ahora Program in Cambridge. The CSP initiative, which began in 1987, is designed to build school/community collaborations, promote instructional change and year-around schooling, and organize schools as sites for access to a wide range of social, cultural, health, recreation, and other services for children, their families, and other community adults. The Ahora Program in Cambridge, MA is a bilingual, multi-cultural youth enrichment program located at the Cambridge Rindge and Latin School and is a partnership between Concilio Hispano de Cambridge and the Cambridge, MA school district. Envisioned as a "bridge to the future," Ahora provides tutoring, mentorship, higher education and financial aid counseling, job counseling, leadership development, and recreational and cultural activities to over two hundred fifty Latino students each year (EHSC).

The examples provided in this section are but a few of the ways that community-school partnerships can provide resources, mentorships, community service opportunities, and comprehensive services to students. EHSC points to the following factors as important to the success of any collaborative efforts: (a) climate in which initiatives begin; the processes used to build trust and handle conflict; (b) the people involved; (c) the policies that support or inhibit their efforts; and (d) the availability of resources to enable the efforts to continue. NASBE suggests the following design specifications for any successful school- community partnership: (a) management and skillful organization, including a clear and concise listing of responsibilities and expectations of the partners; (b) flexibility of organization and implementation; (c) time commitment; and (d) training of teachers, administrators, and community representatives.

Different community organizations provide substantially different benefits to schools. Improved school-community relationships do require a time commitment by both partners. All communities have strengths to contribute to the education of their youth.

Businesses as Partners in Education at the High School Level

According to futurists Cetron and Gayle (1991) the easiest forecast for the 1990s is that "American business will become ever more deeply involved in our schools" (p. 81).

They report that the trend has been building for a decade because "business leaders have taken a long, hard look at America's schools, and they do not like what they see" (p. 82). Employers are supposed to win a competition with the Japanese, who have the highest average literacy level, but are claiming that as many as sixty percent of high school graduates are not prepared for entry-level jobs.

Cetron and Gayle also report that two-thirds of American companies say that education is their number one community relations concern. The National Center for Education Statistics figures show more than 140,000 business-education partnerships sponsored by industry and private foundations. More than forty percent of elementary and high schools participated in partnerships; by the year 2000 this percentage is predicted to reach one hundred percent. The amount of direct and indirect funding is rising rapidly. For example, in 1987 the Council for Aid to Education estimated that direct corporate donations to K-12 education was $200 million. The authors conclude that in 1990 "there is hardly a Fortune 500 company that is not involved in the schools of every community where it has a major presence. Many mid-sized companies have followed their lead. In the 1990s this trend will gain such momentum that no school system in need of help will have to go without it" (p. 89).

In a review of literature on the rationale for public-private collaboration in work force preparation, Smith and Trist (1988) discuss their finding about three broad questions. The first question was "What forces are shaping the work force and the need for skills in that work force?" The literature suggests that the need for better and more linkages is aimed at improving national economic competitiveness, and increasing equity in access to the job market for disadvantaged groups. The second question asked was "What are the implications of the resulting changes both in the work force and workplace for training and education activities and for collaboration between the public and private sectors?" The authors found, given the looming shortage of skilled labor, that the interests of the economy and of individual equity are converging as the need for better and more widely distributed skills grows.

The third question they researched was "What current partnerships seem to offer the most promise in addressing education and training needs in the decade to come?" Smith and Trist concluded that the traditional and uncoordinated modes of work force preparation still prevail. Consensus on most promising partnerships is hindered by two unresolved issues: (a) on the level of content and substance, there is real debate about how much and what kind of education is enough; and (b) on the level of organization, there is little clarity about which institutions should handle which role in training the nation's work force.

Connections between major partnerships initiatives in the 1980s and the budding initiatives in 1992 can be seen by examining the record. The National Alliance of Business (NAB) provided a summary of partnerships that were significant fire starters in the first half of the 1980s and references several classic and prototypic partnerships that appear in contemporary form in the 1991 W. T. Grant report. For example, the American Express Philanthropy program became the Academies of Finance; the Portland Leaders Roundtable reappears as statewide legislation for Workforce Development Fund; and the Parker Project set the stage for the Wisconsin School to Work Transition Initiative.

At the national level, a business-education partnership has been appointed to administer the U.S. Department of Education; Lamar Alexander, former governor of Tennessee, and David Kearns, former chairman of Xerox Corporation, hold the top jobs. As part of President Bush's America 2000 education initiative, the Department of Education sanctioned the formation of the New American Schools Development Corporation (NASDC). NASDC is a limited-lifetime, non-profit corporation funded by American businesses, and intends to support a number of design teams organized to: (a) Create and test designs for schools that achieve national education goals and meet world class standards for all students and help these students leave school prepared for responsible citizenship, further learning, and productive employment; and (b) assist communities across the nation to adopt and recreate these designs for their own purposes (NASDC, 1991). NASDC is a $200 million initiative by big business to involve itself in: (a) systematic restructuring of public schools; (b) development and support of national educational goals; and (c) the establishment of federal, state, and local policy. It is the latest and most visible business-education partnership, following a decade of partnership activity that increased in both number and in intention.

Currently, newer partnerships are forming around the purposes of learning and learning process. We are seeing more interest in apprenticeships (W. T. Grant Report), mentoring (Freedman, 1991), and community service (Conrad & Hedin, 1989; Kielsmeier & Jackson, 1989; Luce et al., 1988; NASBE, 1991). Partnerships are also forming around philanthropic (Meade, 1991), motivational (Shanker, 1990), and policy (W. T. Grant Report) issues.

The W. T. Grant report begins with the statement, "The United States is awakening to the dangers of complacency . . . . The need to build effective links among schooling, training, and the workplace has never been more urgent. The case for greater investment in the preparation of a 21st century workforce has never been more compelling" (p. 5). The publication presents in digest form fifty examples of initiatives to prepare a world-class workforce. The examples are a "kaleidoscope" of what is going on around the country; and most involve partnerships between the school and business and industry. The publication is organized around nine themes: (a) coordinated human resource investment planning bodies; (b) schools to employment transitions; (c) student apprenticeship; (d) technical preparation (Tech Prep); (e) youth community service; (f) employers as active partners in education and training; (g) alternative learning centers; (h) new pathways to postsecondary education; and (i) creative funding mechanisms for human investment.

Future Direction of Partnerships

The increased scope of business-education partnerships noted by the above report appears evident to The Conference Board (1991). The Conference Board exists to enable senior executives from all industries to explore and exchange ideas of impact on business policy and practice. It points to the first of several new directions for partnerships between business and education, that of improved learner outcomes and learning processes. They comment:

> As seasoned observers of the school reform process, we believe that the next wave of business involvement in education improvement has begun. While traditional business-education partnerships continue to benefit students, teachers, and local school operations, major new initiatives... mainly largely "experimental" . . . are being developed to improve instruction and learning. (Conference Board, 1991)

A second new direction is toward accountability and evaluation. These new initiatives are competing for the leadership and financial assistance of the business community. At the national level, President Bush's New Generation of American Schools project is heavily dependent upon business leadership. Locally, business leaders are strongly supporting school-based management and school choice programs. At the same time, major corporate leaders involved in the Business Roundtable program are advocating school reform through state legislative action.

As the scope and intent of partnerships increase, the cost to all of the actors will increase. This may cause concern for corporate philanthropists, according to Weisman (1991a). He reports that SchoolMatch, a for-profit business, recently expanded its operation to evaluate school-business partnerships. He also reports that the United States Department of Education awarded a $1.5 million contract to the Southwest Regional Education Laboratory in California to evaluate partnerships and to develop replicable assessment models. The National Association of Partners in Education is soon to release a *how to* manual for partnership evaluation. This is a trend that may follow the increased investment in school-business partnerships.

The third new direction suggested in the literature is the shift from fiscal independence to co-location of services paid for by general and fiscally-dependent governmental budgets. The movement to open the doors between public school, business, and other public social services is aimed to enhance the learning readiness of the child (Broder, 1991; CED, 1991; NASDC, 1991). The New Vista high school for teenage mothers at Honeywell, Inc. headquarters in Minneapolis (Broder) and the Texas Instruments, Inc. partnership, called the Cone Center, in Dallas, (Donnely, 1991) combine the talents of industry, public schools, and university; the benefits of schooling and social services; and the commitment of parents.

The literature on business-education partnerships also includes limitations and cautions. Cremin, as well as other observers, suggests that mistrust, misunderstanding, and misrepresentations of interests is nothing new in school-business partnerships. Much of this is a manifestation of differing beliefs and values about education and private enterprise. In *The Work of Nations*, author Robert Reich, as reported by Weisman (1991b), contends that the business community's expressed interest in school improvement belies their attempts to avoid paying their share for it. Corporate munificence is a high-profile affair. Lobbying for huge tax breaks is, conveniently, far less so. Reich also shows no sympathy for the claims of $30 billion annual training costs by big corporations—he claims that amount goes into management and executive education.

Reich's critical viewpoint is also expressed by Jack Gordan (1990), editor of *Training* magazine and author of "Can Business Save the Schools." A recent commentary by Gordon (1991) in the *Minneapolis Star Tribune* newspaper included these remarks:

> Critical thinking sometimes shows up on the business community's wish list, as a matter of fact. But nobody explains how the schools are supposed to accommodate business' real desire in this area, which is for a nation of workers whose critical faculties come with an off-switch; workers who think deeply and well about process improvements that will let the company operate with fewer people, but lapse into sublime stupidity when listening to management's assurances that they won't just improve themselves out of a job. (p. A-13)

In a paper presented to the Council of Chief State School Officers, Benson (1991) argues that good public high schools should provide both education and enlightenment, even if not all economists and employers agree that our future rests upon the shoulders of a workforce adept at thinking about work, at work. He cautions:

> Better to be on the side of caution. If America does need a thinking workforce, if the *command economy* of the large size workplace is to give way to reliance on decentralized decisions of individual workers, then attributes of high schools with character appear important, particularly contextual or situational learning, and the inculcation of the habits of mind associated with cooperative learning. (p. 26-27)

Business-education partnerships are built on a need for a skilled work force to improve national economic competitiveness and increase access to the job market for disadvantaged groups. The possibilities for business-education partnerships are numerous. New directions for business-education partnerships include: improved learner outcomes and learning processes; movement toward accountability and evaluation; and a shift to co-location of social and educational services within public schools. Even though numerous business-education partnerships have been implemented, there is not consensus about what types offer the most promise in addressing the education and training needs of the future.

Elementary Schools and Junior High School as Partners with High Schools

Elementary schools and junior high schools are natural partners with high schools in that they supply the high schools with their students. Partnerships between these institutions often involve: (a) curriculum scope and sequence efforts among grades K-12; (b) career exploration in junior high school as preparation for high school course selection, and (c) opportunities for elementary and junior high school students to achieve the basic skills necessary as a prerequisite for high school study.

One example of a curriculum scope and sequence effort K-12 is the Minnesota Agriculture in the Classroom Partnership (M-AIRC). M-AIRC is a broad-based education program helping students in grades K-12 gain agriculture knowledge. It is a public/private partnership between the State Department of Agriculture and many supporting organization from both the agriculture and education communities in Minnesota. M-AIRC is helping young people to learn about the source of their food supply and the role of agriculture in society. In the various components of this program K-12 it is stressed that agriculture is at the heart of global dependence and interdependence. It also points to the importance of students being agriculturally literate in order to make responsible and moral decisions—personally and collectively—about this giant global lifeline (Withers, 1991).

Many school districts encourage joint planning and curriculum scope and sequence efforts between the elementary, junior high school, and senior high school levels. This is an important part of providing developmentally appropriate learning opportunities relevant to a discipline (such as mathematics) or a concept (such as global interdependence). If scope and sequence planning and programming are implemented students will increase their chances of achieving the learner outcomes as they will build on knowledge gained at prior grade levels to achieve at succeeding levels. Scope and sequence efforts also provide for a smooth transition from one educational level to the next without unnecessary duplication of subject matter.

The Educational Options Unit of the Youth, Adult, and Alternative Educational Services (YAAES) of the California Department of Education (1991) issued a report entitled *Roads to The Future: Strategic Plan for Educational Options in the 21st Century*. In this report, YAAES examined ways to improve the linkage between vocational education and other educational options. YAAES contends that junior and senior high schools focus their attention on preparing students for college but do little to prepare students for employment. They contend that junior and senior high schools need to place particular attention on how educational options can be used to increase the skills and learning capacities of youth oriented toward employment after high school.

Junior high school programs that incorporate skill development and career exploration prepare students to make informed choices about future employment opportunities. Career exploration can expose students to new opportunities for employment and the coursework necessary to be prepared for the higher skill level needed for the jobs of the future. "New occupations are being created, and new technologies are shifting the job specific skills of long standing occupations" (YAAES, p. 4). To be poised for such changes, career exploration is important at the junior high school level.

To be successful in achieving learner outcomes at the senior high school level, elementary and junior high school students need to be provided with opportunities to achieve the basic skills necessary as a prerequisite for high school study. Basic skills development in the traditional *core* subjects of mathematics, science, English, and social studies are necessary along with social skill development, career exploration, problem solving, and critical thinking skills. Achievement in these areas at the elementary and junior high school levels can greatly enhance the possibilities of success at the senior high school level. Partnerships between senior high schools and elementary and junior high schools in the same district become very important to students.

Postsecondary Institutions as Partners with High Schools

Postsecondary institutions are increasingly establishing partnerships with secondary schools. These initiatives often involve the coordination of curricula at different levels; provide for a smooth transition for students from secondary education to postsecondary education; or, prepare students with the skills needed to perform specific jobs. This section will review partnerships between secondary and postsecondary educational institutions that facilitate the learner outcomes and learning processes, and that foster the personal, academic, vocational, and social development of students. Although this is not a comprehensive review of such partnerships, examples will be given of the types of partnerships that can be developed to benefit students.

Partnerships between secondary and postsecondary institutions aimed at coordination of curricula and a smooth transition for students are often called articulation programs. A broad definition is offered by Hull (1990), "articulation is a process for coordinating the linking of two or more educational systems within a community to help students make a smooth transition from one level to another without experiencing delays, duplication of courses or loss of credit" (p. 11).

One of the most comprehensive descriptions of articulation was written by Con and Hardy (cited in Hull). This definition describes articulation as a process, attitude, and goal. According to Con and Hardy:

> As a *process*, articulation is the coordination of policies and practices among sectors of the education system to produce a smooth flow of the students from one sector to another. As an *attitude*, it is exemplified by the willingness of educators in all sectors to work together to transcend the individual and institutional self-interest that impedes the maximum development of the student. As a *goal*, it is the creation of an educational system without artificial divisions, so that the whole educational period becomes one unbroken flow, which varies in speed for each individual, and which eliminates loss of credit, delays, and unnecessary duplication of effort. (p. 11)

These definitions point to the important reasons for increasing articulation between secondary and postsecondary institutions. These are: (a) to improve the efficiency and effectiveness of educational institutions at all levels, (b) to help students make a smooth transition from one level of education to another, (c) to eliminate delay, duplication of courses, or loss of credit, (d) to encourage the maximum development of each student, (e) to help students accomplish the same educational goals in a shorter time, and (f) to facilitate higher educational accomplishment in the same time (when compared to un-articulated programs). Robertson-Smith also includes financial restrictions, retention of students, and fostering excellence in technical and basic skills as reasons for secondary and postsecondary institutional articulation.

Some of the reasons for increasing articulation between secondary and postsecondary institutions listed above affect the institutions themselves and others more directly affect the student. The following section will focus on articulation initiatives and partnerships that directly affect the development of students and that facilitate accomplishment of the learner outcomes and learning processes identified in the previous working papers.

Articulation as a form of partnership to coordinate curricula and provide a smooth transition for students can occur in a variety of ways between secondary and postsecondary institutions. For example, as explained by Robertson-Smith, in terms of vocational-technical education, the occupational programs of comprehensive high schools, area vocational schools, and joint vocational schools can be closely and carefully aligned with related programs at two-year technical colleges, junior colleges, community colleges, or proprietary schools; secondary occupational programs can also be coordinated with the related occupational programs offered by four-year colleges and universities. Likewise, two-year postsecondary occupational programs can be coordinated with related four-year programs in colleges and universities. Articulation can even occur across multiple educational levels: secondary programs can be coordinated with two-year postsecondary programs that are, in turn, coordinated with four-year postsecondary programs.

Bragg and Phelps (1990) explain that several types of models exist for secondary/postsecondary articulation, including time-shortened or advanced placement, advanced curriculum, and tech prep. Time-shortened or advanced placement models provide students with credit or advanced standing for postsecondary requirements completed before high school graduation. As a consequence of enrolling in time-shortened programs, students can complete their associate degrees in less than the standard two-year period, typically in one to one and a half years, saving tuition and forgone income.

A second type of model is referred to as advanced curriculum, which includes 4 + 2, 2 + 2, or 2 + 2 + 2. Bragg and Phelps point out that "these models tend to be highly coordinated and sophisticated in the sequencing and structure of courses provided between the various levels of education" (p. 8). The 4 + 2 and 2 + 2 programs are based on continuous six- or four-year curriculum covering grades nine or eleven through fourteen. The 2 + 2 + 2 model provides for a six-year articulation plan for the secondary level (grades eleven and twelve), the two-year college (grades thirteen and fourteen), and the remaining two years of a four-year college level (grades fifteen and sixteen), Bragg and Phelps suggest that successful advanced curriculum programs typically have joint facilities, faculty, advisory committees, and coordinators. Advanced curriculum programs allow the students to exit the programs with a certificate at the end of grade twelve, thirteen, or fourteen.

A third model of articulation between secondary and postsecondary institutions is the technical-preparatory, or Tech Prep, model. The tech prep model provides a common core of learning and technical education based on mathematics, science, communication, and technology in an applied setting. Bragg and Phelps explain that beginning with the junior year in high school, students receive coursework in applied science, mathematics, communications, and technology. More intense education specifications are developed during the thirteenth and fourteenth years of the postsecondary level in such areas as agriculture, nursing, electronics, telecommunications, computers, business, marketing, entrepreneurship, and the construction trades. However, tech prep programs are not limited to only these areas.

Hoerner contends that "tech prep is an educational concept whose time has come" (p. 18). He goes on to say that several efforts and initiatives support the tech prep concept, such as: (a) the importance of serving the needs of all students; (b) the need to align education with the world of work; and (c) the importance of preparing all high school students for employment and further education.

The tech prep concept has the potential to expand since the U.S. Congress passed the Carl D. Perkins Vocational and Applied Technology Education Act of 1990. The Tech-Prep Education Act was a part of the Perkins Act and allocated $63.4 million dollars for the first year of the act. This funding is allocated to states by formula, and is designed to provide tech prep planning and implementation grants to a consortia of schools (Congressional Record, 101st Congress, 2nd Session, August 2, 1990).

A Work Incentive Model for a 2 + 2 tech prep program, discussed by Hoerner, recommends that employers assume a full role by contributing work-based experiences throughout the four years of the tech prep program. In this model, employers not only assist with a variety of work-based experiences such as cooperatives, internships, on-the-job training (apprentice) activities, and paid summertime employment experiences. This partnership with business and industry would provide contextual learning experiences for students and help adolescents gain status in the adult world, which is so important to their development.

Mount Hood Community College in Gresham, OR has had tech prep arrangement with its eight feeder high schools since 1987. North Carolina first implemented a pilot tech prep program in 1986. Today, programs are in place in thirty sites in that state. According to the directors of these programs, the advantages to students are as follows: (a) students receive recognition, including AP credit; (b) students are directed toward higher paying jobs; (c) students receive education which is application-oriented and promotes teamwork; and (d) students have an opportunity to attend community colleges and technical colleges prior to a four-year university, which for some is more intimidating (Willis).

Although the models of time-shortened or advanced placement, advanced curriculum, and tech prep are some of the most common types of secondary/ postsecondary articulation partnerships, others are worth noting. Two examples are: (a) arrangement for transfer credit whereby the course credits of two-year college graduates are transferred to a four-year college when the graduate enters, assuring advanced placement; and (b) postsecondary enrollment options (PSEO) which allows eligible students to enroll in courses at technical colleges or colleges and universities that are comparable to high school courses and get both college and high school credit. A postsecondary enrollment option has been instituted in Minnesota.

Another example of secondary/postsecondary articulation is that between specialized, career oriented high schools and two-year or four-year public educational institutions. Illustrative of this program is Aviation High School in New York City. This high school offers New York students an opportunity to specialize in aviation mechanics and careers related to engineering while receiving a solid academic background (Benson, Mitchell, & Russell, 1989). At Aviation High School, a link with a local community college allows students to work toward a second license and an Associate's degree. This program combines the two-year community college with Aviation High School so that students may attend the college and the high school simultaneously if they have an aviation diploma. Two years after graduating from high school they have an Associate's degree and a second license.

Also important to mention are high school/four-year university partnerships. Coordinating organizations exist that encourage and provide resources for school-university collaborative efforts. Ascher (1988) lists these organizations and their major functions: (a) The College Board's Educational Equality Project Models Programs for School-College Collaboration focuses on projects that change schooling through improving teaching or curriculum; (b) The Council of Chief State School Officers School/College Collaboration is directed at state education projects to plan collaborative efforts; (c) The National Association of State University and Land-Grand Colleges' University/Urban School Collaborative focuses on transition problems of urban youth as they move from high school to postsecondary education or the workplace, and (d) Academic Alliances that are local groups of public school and college teachers in particular disciplines who take collective responsibility for the quality of each other's teaching and learning.

Numerous secondary-postsecondary articulation and partnership initiatives have been highlighted in this section. Although there are many effective initiatives in place, Day (1985) identified critical problems that could inhibit articulation efforts: (a) turf issues of institutions, especially in a time of declining enrollments; (b) scheduling problems; (c) differences in contracts and workload between secondary and postsecondary staff; (d) attitudes held by staff related to competition, fear of loss of budget, the perceptions of each other; and (e) communication difficulties.

As in other partnerships previously discussed in this paper, secondary/ postsecondary partnerships require time for planning and implementing and also require staff inservice in order to be effective. Also important to secondary/ postsecondary articulation efforts is the availability to students of informed, skillful counselors to help students make choices about courses, schools, and career options.

Internal Partnerships at the High School Level

The potential partners discussed thus far in this paper have been those who could be classified as external partners. That is, they are partners from outside the school building. In the process of conceptualizing new designs for the comprehensive high school, it is also important to look briefly at partnerships that are internal, or within the school building. Such partnerships include the relationships between the students themselves; between the students and teachers; between both the students and staff and the administration; and between the alumni and the school.

Seeley (1985) points to the fact that the concept of partnership is fundamental to any learning. He states, "The fact that students must be in partnership with whoever is immediately teaching them, is the most fundamental element in any educational policy" (p. xvii). Seeley contends that whether or not public school systems choose to move to effective learning partnerships, there are several examples that show it can be done. Some of these are

> programs that exemplify small scale; more voice and choice for students, teachers, or both; more opportunity for student responsibility; more opportunity for teacher initiative; more parent involvement; more emphasis on the school or learning group as a "family"; and more emphasis on mutual goals, respect, and loyalty among the participants. (p. 216)

Seeley also suggests the use of cooperative learning to support the classroom as the key unit in achieving mutually supportive family-type values. The cooperative classroom can help achieve the goal of mastery of skills and outcomes by all students in the classroom.

Bryk and Driscoll (1988) contend that the social organization of the secondary school directly affects administrators' and teachers' work and may influence a variety of outcomes for students. Based on a review of recent literature, Bryk and Driscoll see three core concepts comprising a communal school organization:

> (a) a system of shared values among the members of the organization, reflected primarily in beliefs about the purposes of the institution, about what students should learn, about how adults and students should behave, and about what kinds of people students are capable of becoming; (b) a common agenda of activities designed to foster meaningful social interactions among school members and link them to the school's traditions; and (c) a distinctive pattern of social relations, embodying an ethos of caring that is visibly manifest in collegial relations among the adults of the institution and in an extended teacher role. (p. 5)

Bryk and Driscoll found that the consequences of the organization of a high school as a community included: increased teacher satisfaction; an increased social bonding of the students to the school and the core activities and goals; and a decrease in the incidence of dropping out because the students felt they belonged to something of value.

The importance of building collaborative partnerships between administrators and teachers, and between the teachers themselves is discussed by Smith and Scott (1990) in their book, *The Collaborative School.* They believe that collaboration is intended to facilitate instructional effectiveness. They list the following elements as essential to a collaborative school: (a) a belief that the quality of education is largely determined by the school site; (b) a school environment characterized by collegiality and continuous improvement; (c) a belief that teachers are professionals who should be given responsibility for the instructional process and held accountable for the results; (d) the use of a wide range of structures and practices, and (e) the involvement of teachers in decisions about school goals and the means of achieving them.

In a collaborative school, teachers share formally and informally about learning outcomes and learning processes; they are encouraged to and respected for trying new ideas; and, they support each other and believe increasingly that all students can learn. Some of the practices that help build collaborative partnerships among teachers, according to Smith and Scott, are peer observation, peer coaching, teaching clinics, mentor programs, and teacher support teams. If a school is to be collaborative, administrators must believe in collaboration and encourage it; share authority for matters traditionally assigned to them; and, help to empower teachers to take part in goal setting, allocating school resources, and overseeing their professional development (Smith and Scott).

In addition to the internal partnerships of teacher-teacher, teacher- student, student-student, and teacher-administrator, the alumni of a school can be important partners. Since they know the internal culture of the school, they can provide important links from the school to the external community and places of employment. They can also serve as mentors, guest speakers, career counselors, peer tutors, and teachers. An example of the benefits to the school of a strong alumni association is the Aviation High School in New York City. Here the alumni play an important role in providing mentorships and scholarships for present students, as well as joining the regular teaching and administrative staff of the school.

Paradigm Shift in Partnerships in Education

In *Partnerships for Improving Schools* (1988), Jones and Maloy used a case study methodology to understand the role of partnerships in school improvement. "Three important analytic concepts from social science were used to ask why multiple realities, ill-structured problems, and reflexive thinking characterize viable partnerships" (p. 14). Multiple realities are represented in the different agendas, ideas, norms, and beliefs of the partners. Ill-structured problems have ambiguous and unclear answers that vary in their definitions and over time; outsiders often add the element of ill-structuredness to schools which tend to like well-structured problems. Reflexive thinking involves a self-consciousness about one's perspective that leads to shifts in how one perceives self in the organization. Understandings evolve when individuals or organizations work in partnership. The partnership relationship often helps individuals or organizations to change their ways of interpreting the world and to gain perspective on where they are or have been.

In their analysis of school partnerships, with an eye to the transformation of schools, Jones and Maloy strongly support collaborative (also called interactive) partnerships instead of the activity-specific cooperative relationships that have characterized many of the educational partnerships in the past. Their recommendation is based upon three propositions and represents the first way in which we are seeing a paradigm shift in partnerships:

> 1. When teachers associate with colleagues and people from other organizations to exchange benefits, partnerships generate mutual learning processes. The resulting empowerment counteracts the frustration, isolation, and organizational stasis experienced by many educators; communication about personal and organizational constraints is enriched.
>
> 2. As people from different organizations, or different parts of the same organization interact, participants play new roles and develop new relationships. Experiencing new activities in different settings fosters both personal and organizational growth and development.
>
> 3. After learning new roles and experiencing other organizational cultures, partners infuse daily activities with alternative understandings about teaching and education. (p. 11)

Jones and Maloy point out that collaborative partnerships are a means to an end, not an end in themselves. Partnerships create possibilities for education so that future societies may hold greater choices. They say that "school partnerships will develop little of their potential unless they: (1) engage teachers as active decision makers; (2) help schools and their communities agree on goals, standards and implementation plans; and (3) stimulate discussions among insiders and outsiders over educational purposes related to both equality and quality "(p. 156).

Authors Jones and Maloy emphasize the transformative possibilities of school partnerships when they involve the voices from all of the stakeholders and when they redistribute the power more equitably among the partners. Shared activities with outsider partners will raise troublesome issues and require mutual accommodation, but the promise of new insights and unanticipated outcomes is also real and compelling. Teachers may explore new definitions of professionalism and shape evolving strategies and structures of schools. "Students and parents may discover a new sense of educational purpose and a vision of a better future" (p. 163).

A second way we are seeing the nature of partnerships change is movement toward social responsibility. Business leaders have discovered that their involvement with schools has reshaped their sense of social responsibility (Broder; Jones and Maloy). James Renier, Chairman of Honeywell, Inc., opened The New Vista school for teenage mothers in the

Honeywell corporate headquarters. Renier also served as head of a Committee for Economic Development (CED) task force that published *The Unfinished Agenda: A New Vision for Child Development and Education* (1991). In the task force report, he and two hundred fifty other leading business executives concluded that the piecemeal efforts to remove one or another roadblock from a child's path to adult citizenship and economic self-reliance will not succeed (Broder).

The broader vision is for business-education-community partnerships. Based upon the CED recommendations and his conversation with Renier, Broder goes on to state:

> Even more than the system needs additional money, he and his colleagues concluded, it must be redesigned to do two things. First, it has to reach out into the community to enable parents, especially those with meager educations of their own, to avail themselves of the services their children need. Second, it must deliver continuing social services at school to help youngsters become active, eager students while allowing teachers to concentrate on their real job of education. The social service agencies already exist in most communities, but too often are not readily available at school sites. (p. A 13)

Several authors agree that there had been a collapse of civic virtue in the society around us, a collapse into expressive and competitive individualism, and a loss of integrated vision (Bellah, 1985; Elkind, 1984; Magner, 1991). Magner states, "when it comes to drugs, crime, aids, racial harassment, and other crisis in American life, the needs of the community must be reasserted, but only in ways that infringe as little as possible on individual rights" (p. A3). This renewed sense of social responsibility and community is reflected in the learner outcomes and processes deemed important to new designs for the comprehensive high school.

The third way in which we are seeing a paradigm shift in the partnership movement is the strong interest in learner outcomes and learning processes (Berryman, 1988; Raizen, 1989; Resnick, 1987). Researchers are refreshing the public's interest in the importance of context and experience. There is renewed interest in integrating vocational and academic education as a way to transform and strengthen both. Resnick made the case clearly in her 1987 presidential address to the American Education Research Association. She said:

> I looked for elements common to programs that could point cumulatively toward a theory of how learning and thinking skills are acquired. I found three key features. First, most of the effective programs have features characteristic of out-of-school cognitive performances. They involve

> socially shared intellectual work, and they are organized around joint accomplishment of tasks, so that elements of the skill take on meaning in the context of the whole. Second, many of the programs have elements of apprenticeship. That is, they make usually hidden processes overt, and they encourage student observation and commentary. They also allow skill to build up bit by bit, yet permit participation even for the relatively unskilled, often as a result of the social sharing of tasks. Finally, the most successful of the programs are organized around particular bodies of knowledge and interpretation—subject matters, if you will - rather than general abilities. (p. 18)

Seeley, (1985, 1989), clarifies the fourth way we see a paradigm shift in partnerships: the importance of reconceptualizing education as a partnership rather than the present governmental service delivery system. Seeley feels that genuine partnership is driven out of education as schools, parents, and students come to think of their relationships in terms of service delivery—of *provider* and *client*, of *professionals* and *target populations* (1985, p. 65). Seeley goes on to say that the concept of service delivery, unlike that of partnership, leads to conflict-producing ambiguities about whether provider or client wields more power in the relationship. This reconceptualization to a partnership model does not imply that government, bureaucracy, or professionalism will disappear from education. They cannot, however, be ends in themselves, but must be looked upon as means to achieve ends grounded in the interests of parents, students, citizens, and teachers.

A fifth dimension of paradigm shift in partnerships is the shift to an ecological view of education. The ecological view (Davies, NASBE) recognizes the interrelatedness of the multiple institutions and sectors of society, and the strengths and expertise of families, communities, businesses, and postsecondary institutions to contribute to the personal, academic, vocational, and social development of students. The ecological view offers an expanded view of the learning environment and engaging learning experiences which are contextual and experiential.

Finally, the literature reviewed for this paper on partnerships points to a sixth way we see a paradigm shift: the implementation of a *bottom-up* strategy for educational reform. Successful educational partnerships where the rhetoric does not belie the reality, involve all stakeholders, including students, parents, teachers, in genuine communication and in the designing and implementing of improvement strategies (Corrigan & Mobley, 1990; Seeley, 1985).

Conclusions About Partnerships

Educational partnerships are a promising way of working together that are both old and new. Partnerships with families, communities, businesses, elementary schools, junior high schools, and postsecondary educational institutions could contribute to the achievement of learner outcomes and facilitate learner processes such as providing learning that is engaging, contextual, and experiential. A comprehensive, ecological approach to school reform will require movement from partnerships that are merely communicative and cooperative to those that are collaborative or integrative. The following summary the literature on educational partnerships, issues surrounding successful implementation, and possible design specifications should guide our design efforts.

Summary

1. Several terms are used interchangeably with the word partnership or are used to describe a particular level of association of interrelationships. Some of these are cooperative, network, linkage, collaborative, consortium, coalition, and alliance. This use of multiple terms can be problematic and requires that partners clarify terms as they begin to work together.

2. Partnerships can be classified by the degree or intensity of relationship; ranging from separation (no interaction) to integration (symbiotic relationship). With an increase in degree or intensity comes more commitment by the partners to share information and resources; to modify the individual organizations to accommodate mutual goals and objectives; and, to be mutually accountable to reach joint goals.

3. Partnerships can be described as having a life span. Some partnerships are short-term relationships that are project-specific, while others are growing, evolving, long-term relationships that start small, and through sustained hard work and building of trust, become complex, comprehensive, multi- dimensional relationships.

4. General features that characterize collaborative partnerships are: shared goals; mutual respect and trust; cooperative effort; shared power; a contribution of varying talents, perspectives, and resources from each partner; and, shared accountability.

5. While the idea of collaboration or integration is attractive, the reality is that collaborative work is often difficult and complex and often involves ambiguities related to goals and motivations.

6. Collaborative partnerships will require time to develop. Time together is required of partners to learn to be reflective instead of protective; to become comfortable with each other's context and goals; and, to understand each other's perspectives. Time will also be required for training in collaborative work and for cooperative planning, implementation, and evaluation.

7. An historical perspective of partnerships in education can give some clues as to the barriers that might be experienced in movement to collaborative work and what might be learned from efforts that have been successfully implemented in the past. For example, a barrier exists in movement to a partnership model of education in that during the last century education has been conceptualized as a service-delivery model rather than as a partnership. Movement to a partnership model of education will require a reorientation of educators, parents, administrators, and students away from a service-delivery model. The success of apprenticeships, mentorships, and experiential learning opportunities used in the past is renewing interest in replicating these methods in today's educational system.

8. There seems to be a paradigm shift in partnerships occurring that involves the following features: (a) movement away from activity-specific partnerships toward collaborative partnerships; (b) a movement toward social responsibility; (c) a strong interest in learner outcomes and learning processes; (d) a reconceptualization of education from a service delivery model to a partnership model; and (e) a *bottom-up* strategy for change.

Issues

The study of partnerships raises problematic issues and suggests the following questions for continuing discussions among educators and their partners.

1. The research indicates that sustained collaborative work must come with a *want-to, want-to* motivation rather than an *ought-to* or *obliged to* orientation. Can partnerships that are mandated by top-down pressure for organizational

collaboration such as state policy requirements be successful in an atmosphere of *ought to* or *obliged to*?

2. Partners need to communicate well and have a history of cooperative association before the trust and ground work are built to operate at a collaborative level. Are schools and potential partners ready and able to commit the time and the training necessary to sustain collaborative partnerships? Why are schools often leery of business and industry forming partnerships in education?

3. Some of the most creative, effective partnerships involve unlike partners approaching the goals and problems being addressed from varying perspectives. How can the stereotypes and misconceptions held by educators and potential partners be stripped away so that effective partnerships can be formed? How can we deal with the ambiguity that naturally exists when people from different backgrounds want to work as partners?

4. Are educators willing to move from a service delivery model (provider and client, professional and target audience) to a partnership model (shared power, goals, and accountability) of education?

5. Collaborative partnerships are not a quick-fix for educational improvement. How can we move from rhetoric to actually implementing collaborative partnerships? How do we find mechanisms for fair and equitable practices that involve all stakeholders in educational reform?

Design Specifications

New Designs for the Comprehensive High School hopes to provide design and development specifications for the comprehensive high school for the twenty-first century. The program of research includes six phases; these are the desired learner outcomes, learning process, organization and partnerships, staff and staff development, facilities and supplies, and cost. The Design Group members and research staff have used a design-down strategy for this project. The design-down strategy requires designers to begin with a vision for a symbol, signature, or student most representative of the aims and goals of the school designs. "New Designs..." has kept the characteristics of several such symbols in mind—the one-room school, a soaring eagle, the grin of self confidence, Leonardo da

Vinci and Yoda—and envisions such symbols displayed on the keystone of the new schools. The above mentioned phases are represented as the blocks in the supporting archway.

Once the most desired learner outcomes, learning processes, and organizing patterns were selected, provisional design specifications were established. The research team became most aware that the organization and partnerships for the new high school designs would be substantially different from the conventional practices of schools. It would be impossible to achieve the active, experiential, and collaborative aspects of school with organizations that were bound by the typical high school facility, or through partnerships that were divorced from the learning and teaching processes.

From the sources reviewed for this working paper on partnership ideas for "New Designs..." and with the guidance of the Design Group members, we suggest that partnerships for the comprehensive high school of the future should be consistent with the following design specifications. It is our determination, at this time, that the specifications will be representative of collaborative partnerships.

The design specifications for collaborative partnerships fall naturally into two interacting categories: (a) specifications for practice, and (b) characteristics of partners.

Specifications for Practice:

1. Statement of common goals that is clear and concise and that is recognized and developed cooperatively.

2. Assessment of the talents and resources each partner possesses and is willing to commit to the partnership.

3. Provision of sufficient time and in-service training to plan, sustain, enhance, and evaluate the partnership.

4. Cooperative effort involving all key players that utilizes the talents of the partners in the effort.

5. On-going communication that is inclusive of all individuals and institutions in the partnership.

6. Sharing of responsibility and accountability.

7. Periodic evaluation of the collaborative process.

8. Celebrations of successes.

9. Identifying possibilities for future collaborative work.

Characteristics of Partners:

1. Belief in the ability of partners to bridge different institutional cultures for a specified purpose.

2. Evidence of mutual respect and trust among partners often built through prior associations.

3. Realistic expectations of the partnership; recognizing that successful partnerships often build from small success into multi-dimensional efforts.

As "New Designs . . ." continue to develop from the design-down strategy, the specifications for partnerships will be tested and re-tested for consistency with the emerging structures. The partnership specification must fit into and add strength to the emerging high school structures.

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APPENDIX H

Learning Staff: Conditions, Guidelines, and Desired Characteristics in New Designs for the Comprehensive High School

LEARNING STAFF: CONDITIONS, GUIDELINES, AND DESIRED CHARACTERISTICS IN NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

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LEARNING STAFF: CONDITIONS, GUIDELINES, AND DESIRED CHARACTERISTICS IN NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

The Context of the Problem

Every educational reform movement has its defining characteristics wherein a major focus or a specific problem area is targeted and reform efforts are directed. For example, movements in the recent decade have been particularly directed at *basics, organizational restructuring, teacher education and professionalization,* and *at-risk populations.*

The present attempt to redesign the comprehensive high school is, however, different in that it signifies much broader and deeper problems about the nature of education in the American high school. It goes beyond the traditional problems of the ability of educators and the adequacy of school facilities to meet student needs in response to the changing demands of technology and the demographics of a post-modern society, to the more radical problems concerned with the capacity of educators and schools to fundamentally change their habits of thinking about the nature of their subject matter, as well as the methods used in instruction, new forms of curriculum and school organization, and practices within the profession. As a consequence of the recent discussions and research about learning and current teaching practices of vocational and academic teachers in local school sites across the nation, there is a sense that dramatic shifts are occurring both outside and within the walls of academia about what education and schooling ought to be all about.

Unlike past reform movements, the present demands for change in the educational system are equally a result of changes in the internal conditions of schools of higher education as well as the external social, cultural, and economic conditions of the society. Popular demands for a world class worker who is socially more adaptable in working with co-workers, who is culturally more sensitive to a variety of work situations and worker roles, and who is more highly skilled in the current technology and state of the art knowledge about the job, the product, and the work place have come to intersect with critical debates among scholars and educators about new conceptualizations of and approaches to learning and, consequently, to teaching and designs for school organizations.

The most fundamental paradigm shift effecting education and the corresponding practices in research and training today is in the social philosophical understandings about what constitutes knowledge and human understanding. What underlies different conceptualizations of learning are different ways of knowing. Educators are turning away from an era dominated by Positivist theories and methods towards sense-making phenomenological and interpretive approaches to knowledge and understanding of experiences in the world. As a consequence, notions about what education is and how learning takes place are undergoing transformation. At the same time that educators are trying to respond to the external demands placed upon them, they are necessarily having to rethink old habits, their presuppositions, assumptions, and principles on which they have reacted or responded to these external demands in the past and present.

One of the fundamental problems challenging reformers has been in finding clear ways to articulate the transformations in learning theory and their representative practices in the field and to find the fit between educative sense and work-place sense in terms of professional, lifelong educational training and preparation programs.

In its broadest sense, it is within the context of the past decade's social and philosophical debates concerning knowledge and the human experience of knowing along with the history of issues concerning the establishment and structure of the comprehensive high school that this endeavor to redesign the comprehensive high school is situated. Even though the challenge of redesigning a comprehensive high school has been initiated by vocational education researchers and scholars—with the help of a broad-based design group—it is an issue that obviously bears the collective concern of all those engaged in the educational enterprise today at all levels of educational practice, as well as with public and private ventures in local school communities.

Perspective on the Research Project

The overall intent of this paper is to refine in three ways the perspective framework in which the new design for the comprehensive high school was originally envisioned: (a) To interject a philosophical perspective about the shift in paradigms that underlies the *old* and *new* ways of envisioning the comprehensive high school and its effect on thinking, as well as how to proceed in the new conceptualization of the comprehensive high school; (b) to take this as an opportunity to critically review the New Designs project reports and discuss areas that might appear problematic to staffing and staff development; and (c) to address the constitutive nature of a staff for the New Designs high school and how to sustain its continuous professional development.

Questions to be posed would include: (a) What should the qualifications for staff be? (b) What would the organization of the staff look like? (c) What kinds of pedagogical expectations would there be for staff workload and delivery? (d) What type of plan should there be for ongoing professional development? and (e) What kinds of considerations need to be made in making suggestions or planning for a staff and their professional development that might differ from traditional practices?

The approach in answering these questions was to briefly review different aspects of the project as they have been researched and currently stand as design specifications. Principles that are intrinsic to the design specifications were identified, as were the ways in which these principles appear as guides to knowledge construction. From the identified aspects and principles, staff characteristics and professional development needs were suggested that follow in accordance with the conditional requirements set by these identified principles and mode(s) of operation. Finally, critical issues about the reality of fulfilling these conditions are raised by way of question-posing.

Review of General and Specific Aspects of the Project

During the initial stages of the project in 1988, two strands of research emerged: (a) defining the unique subject matter of vocational education, and (b) developing the interaction between vocational and general education. Preliminary discussions about the underlying rationale for the project and philosophical approach to the design were described in National Center for Research in Vocational Education (NCRVE) published reports: *Polytechnical Education: A Step* (Beck, 1990a); *Vocational Preparation and General Education* (Beck, 1990b); *Subject Matter of Vocational Education: In Pursuit of Foundations* (Copa & Tebbenhoff, 1990); *General Education: Vocational and Academic Collaboration* (Beck, 1991); *A Framework for the Subject Matter of Vocational Education* (Copa, 1992); and *An Uncommon Education: Interaction and Innovation* (Beck, Copa & Pease, 1991).

The research phases for New Designs for the Comprehensive High School were then denoted within the project, and research and synthesis papers were produced. This report about staffing and staff development is the fifth in the series, and differs in function from the previous four papers. It aims to provide a critique—something like an internal evaluation—in addition to providing other dimensions of the design project. The literature review about professional aspects of vocational educators, and more generally about staffing, serves the purpose of problematizing the current attempts at staff development for secondary level educators. These attempts provide insight into the difficulties in taking practical steps towards institutionalizing the final design specifications.

Three important points to the earlier preliminary discussions are germane to the principles found within the New Designs model and its underlying assumptions. First, in defining what is unique about the subject matter of vocational education, there are equal and inseparable concerns for defining a comprehensive education in answering the question: What is an educated person?

Second, the vocational and academic split in the curriculum is a false dichotomy. The current movement towards integration of vocational and academic education necessarily requires looking at new forms of collaborative relationships, new organizational structures in the institution of schooling, new definitions of roles and responsibilities of school members, new conceptualizations of learning, new alliances with institutions both internal and external to the school system, and new meanings of comprehensive in all aspects of education (Lydecker, 1983). Finally, school designers must start from a philosophical clarification about desired ends and aims-in-view of education and schooling in order that appropriate educative means and learning conditions for achieving those ends can be designated accordingly.

Summary of Previous Research Phases

Briefly, the results of previous research and synthesis papers included the following preliminary design specifications:

Learner Outcomes

In conjunction with educational outcomes adopted by the Minnesota Department of Education (April, 1991), the following list of outcomes were approved:

> In order to lead productive fulfilling lives in a complex and changing society and to continue learning:
>
> The graduate shall demonstrate the knowledge, skills, and attitudes essential to:
>
> 1. Communicate with words, numbers, visuals, symbols and sounds.
> 2. Think and solve problems to meet personal, social, academic needs.
> 3. Contribute as a citizen in local, state, national, and global communities.
> 4. Understand diversity and the interdependence of people.
> 5. Work cooperatively in groups and independently.
> 6. Develop physical and emotional well-being.
> 7. Contribute to the economic well-being of society.

Learner Process

The learning process (curriculum, instruction, and assessment) is aligned with the learner outcomes and the components of the learning process are aligned among themselves. Additionally:

1. Learning process uses integrated curriculum.
2. Learning process uses assessment to improve learning.
3. Learning process is relevant to real life.
4. Learning process is personalized.
5. Learning process is active and experiential.
6. Learning process is emancipative.
7. Learning process is engaging.
8. Learning process is rigorous.
9. Learning process creates a feeling of community.

Organization

The focus in organizing the high school is around educational activities and a shared collective sense of ownership between all participating members of the school environment.

1. The school organization should provide strong community focus.

2. The character of the organization pays attention to learner process considerations and supports the acquisition of identified learner outcomes.

3. The organization should take the form of: (a) a small school within a whole school, or (b) division of the whole school into smaller schools (e.g. house plan, academies).

4. School organization should avoid tracking or ability grouping that allows for vertical or horizontal heterogeneous grouping by students' interests.

5. The school organization should include other educational institutions as learning settings that provide for educational and work experience opportunities (e.g., elementary, post-secondary).

6. The school organization should include other learning settings within the community (home) that provide for real life and work experience in service to the community (e.g., apprenticeship, internship, mentorship programs).

7. The school organization should include flexible strategies for organizing learning time in terms of scheduling.

8. The school organization and structure should allow for the comprehensive integration of teaching staff.

Partnerships

Partnerships provide a new dimension of schooling that integrates external community groups, educational institutions, and persons as participants into the fabric of the high school curriculum.

1. Partnerships can take a number of different forms in linkages to the school (e.g., networks, consortiums, coalitions, alliances).

2. Partnerships feature collaborative relationships that include shared goals, mutual respect and trust, cooperative efforts, shared power in decision making, a

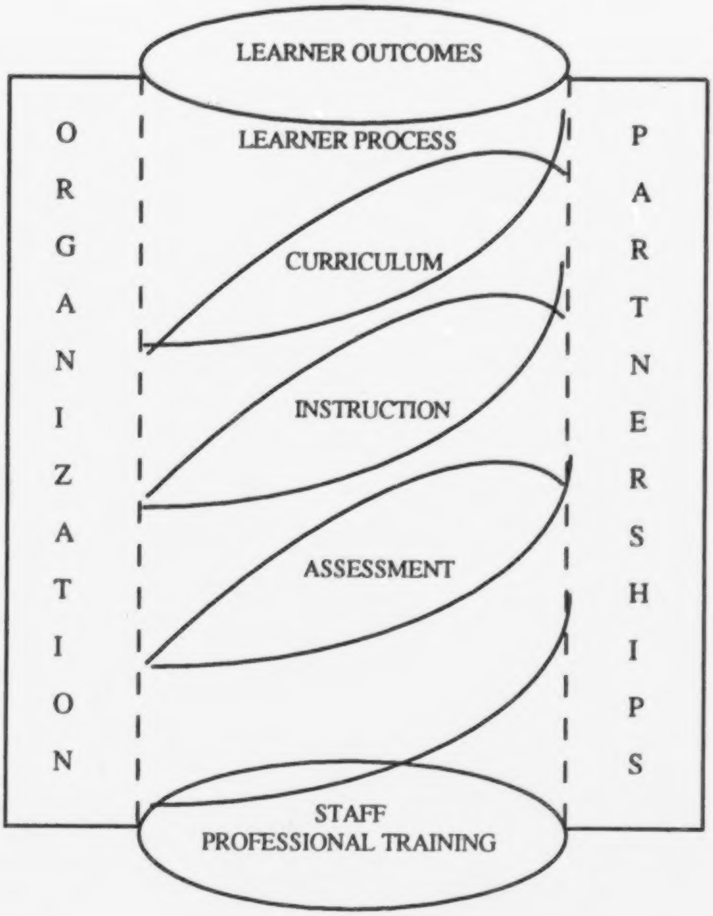
contribution of varying talents, perspectives, and resources from each partner; and shared responsibility and accountability.

3. Partnerships can be with families, other schools, community organizations, businesses.

4. Partnerships require time and training in collaborative work for strategies in cooperative planning, implementation, and evaluation.

The following diagram illustrates the formerly-described aspects of the new design, inclusive of staff and professional development.

Figure 1
One Model of the Interrelationship of the Design Phases


LEARNER OUTCOMES
LEARNER PROCESS
CURRICULUM
INSTRUCTION
ASSESSMENT
STAFF
PROFESSIONAL TRAINING
ORGANIZATION
PARTNERSHIPS

Concerns about the New Design Principles and the Paradigm Shift

The New Designs research project can be examined more closely with respect to the fundamental principles and the modes of understanding that seem to be in evidence in the project papers. The three principles that are apparent are the design-down process, collaboration, and integration. The modes of understanding represent the paradigm shift from positivistic to interpretive and critical ways of knowing.

Principles of the New Design

There are three main principles that can be ascribed to the New Design for the Comprehensive High School. They are: (a) designing-down; (b) collaboration; and (c) integration.

The principle of designing-down is most familiar with the current Outcome Based Education movement. It applies vertically in the illustration in Figure 1 in conceptualizing the consistency in the relationship between learner outcomes and the considerations involved in decision making within subsequent aspects of the New Design model (i.e. learner process, staff and staff development, school organization and partnerships). Operationally, it necessitates a projected view of what an educated person ought to be in the form of outcome statements; then designs-down accordingly in all aspects of schooling. It presupposes dialogue and shared understanding about the characteristic ideals.

Collaboration is the second principle. It runs horizontally and applies more directly to the structure of educational activities, interpersonal dynamics, and communicative practices between individuals and groups in their construction of knowledge and conscious nurturing of a community of learners. It expresses itself in the practices of team teaching, partnership-building, rotation of professional roles, curriculum design and construction, and interchange and across disciplinary boundaries in subject matter as well as exchange between peers and traditional roles. It aims for a collective sense of community identity and expression of the individual as a responsible part of the whole. The metaphor of the family comes to mind when thinking about everybody who becomes involved in the New Designs research project.

Integration, as the third principle, is expressed both horizontally and vertically throughout the desired features of the new design as something that signifies meaning beyond the knowledge base level of the separate phases of the research project as a whole. Akin to the notion of culture, integration functions meaningfully as having a fulfilled sense of wholeness as an individual. The notion of integration is diffuse and generative in its application mode, ignoring lines that separate, while creating bonds that enforce learners' opportunities for expanding conceptual thinking about the construction of the curriculum. As a form of decision making, integration takes into consideration all relevant foreground, context-bound aspects of a problem in conjunction with background aspects in reference to the multi-dimensional nature of its educational philosophy, beliefs and attitudes of its players, and intended meaning communicated through everyday educative practices.

Paradigm Shifts

Existing approaches to the restructuring of education in high schools fail to address philosophical issues concerning the coherence of the current reforms in design programs themselves (Bottoms & Presson, 1989; Samson, H. E., 1990). An examination of some identifying characteristics of the shift in paradigms from a positivist and purely scientific orientation to the phenomenological, interpretive and critical perspectives will in turn enable educators to clarify common sense about the comparative differences between the *old* and *new* ways of learning and schooling reflected in the proposed new designs.

The following illustration in identifying characteristics of the shift in paradigms, as well as those that will follow in the design-down process, should not be perceived narrowly. For example, although knowledge is understood as an aim of the old habit of thinking about research, it is obvious that knowledge is also an integral part of understanding in the new research concerns. Without a doubt, each of these terms are steeped in a history of social and philosophical discourse among the human science communities. Also, no doubt, there have been many reforms over the past decade that were exemplary of the new thinking, such as that witnessed during the early 1970s Alternative School Movement. Some will likely agree that both the old and new are important ways to be valued in work as educators, and are a part of the reality of schooling. It is the author's intent to draw upon major distinctions in order to get oriented or reoriented in thinking about the paradigm shift and make sense of how it affects thinking about developing the new design model for the comprehensive high school and some current related reforms.

The reference is to characterizations of important shifts in consciousness, while also thinking about disciplined forms of inquiry that can be broadly associated with the two major paradigms: Positivist (inclusive of behaviorism, functionalism, structuralism) and Interpretive (inclusive of phenomenology, critical theory, hermeneutics). The differences in these two paradigms is shown in Table H.1 as relates to ways of "knowing".

Table H.1
Philosophical References and Criteria for the Conditions of Knowing (Ways of Knowing)

Positivistic	Interpretive
Scientism	Interpretive
Verification/certainty	Situated meaning
Knowledge	Understanding
Rationality	Sense making
Truth & method	Ways of knowing
Separation of fact and value	Everything is value laden
Isolated units (atomism)	Holistic, interdependent
Continuity in stability	Continuity in change
One real world	Multiple realities

The suggestion here is that these shifts in ways of knowing underlie the past two decades' reform movement. The perspective taken in this project is oriented toward the interpretive but includes, where appropriate, Positivist orientations in subject matter. The attempt here is merely to show how this comparison can be a useful approach in understanding how to reconceptualize new designs for the comprehensive high school while considering how a successful transformation in thinking necessarily involves an understanding of how thinking is embedded in a tradition of intellectual debates about ways of knowing and, consequently, consciousness in being and becoming.

Learner Outcomes

In outcome based education, the learner outcomes are the projected view of the educated person, an educated person's relationship with other persons, attitude towards society, and the dynamics that underlie these relationships instead of an unbalanced stress on technical skills (Illinois University, 1984). The shift in ways of thinking about learner outcomes appears from valuing individualism to a more socially conscious, integrated person (see Table H.2). The traditional view lays stress on the Self as ultimately an independent and self-sufficient person who necessarily must look out for individual needs in opportunistic and self-interested ways.

Table H.2
Characteristics of Learner Outcome in Two Ways of Knowing

Old Characteristics	New Characteristics
Individualism	Integration
One-dimensional self	Autonomous, multi-dimensional self
Self-interested	Concern for self in relationship to others
Independent national societies	Interdependent world communities
S-R driven relationships	Meaning-driven international relationships
Competing strategies in positions of power	Negotiated and communicative mutual exchanges

Societies are looked upon as competing nations. And the individual's relationship to society is a functional one—persons devoutly render service to their society and country as a matter of duty. Associated in their identity by political categories of social status and economic classes, individuals rely on these definitions of the Self in their interactions with others on the basis of their power and influence.

The integrated view, on the other hand, sees persons as autonomous beings who are self reflective and self critical in realizing their interdependent relationship to individual and collective others. Society is broadly understood as the world community within which all cultures are equally respected and for which all actions are mutually taken. Persons identify themselves as part of a larger whole that extends beyond their local cultural boundaries of social class, race, and ethnicity. Persons negotiate claims in communicative exchanges for the mutual benefit of all.

Learning Process

Within the learning process, there exist different conceptualizations and approaches to curriculum, instruction, and assessment. In the area of curriculum, the focus is on the ways in which courses are organized, course content and its design, and how the subject matter disciplines are treated (see Table H.3).

Table H.3
Characteristics of Curriculum in Two Ways of Knowing

Old Characteristics	New Characteristics
Fragmented	Integrated
Single course offerings	Interdisciplinary courses and projects
Subject matter tied to disciplines	Problem-posing, thematic, issue-driven, value-laden topics
Separate disciplines	Integrated
Separation of vocational and academic	Integration of vocational and academic

The shift in the high school curriculum comes from a conceptualization of subject matter as existing independently and separately among the many disciplines, offering a fragmented knowledge about the world, to a curriculum that is highly integrative in terms of designing interdisciplinary subject matter content and in the combination and coordination of disciplined perspectives. Comprehensive takes on new meaning, in the sense that the treatment of human knowledge and understanding is not taken as a cognitive activity of gathering facts and accumulating information, but as an integrative process of understanding, which involves conceptual planning and reflection on the representational aspects and interpretative nature of course content. The construction of the curriculum is meaning driven, context sensitive, and value ridden.

Considerations about instruction involve the ways in which students and staff function (see Table H.4). It also involves the ways that students and staff are organized in the learning environment.

Table H.4
Characteristics of Instruction in Two Ways of Knowing

Old Characteristics	New Characteristics
Individualized	Collaborative
Isolated individuals	Cooperative learning
Individual/group ability	Collaborative role-taking, tracking
Management through discipline	Management through interests
Classroom, laboratory centered	Real life situations

Instructional methods that involve collaborative team efforts among teachers, as well as cooperative learning and shared educative practices among students, is considered more desirable than the excessive focus on individualized attention with the primary relationship between student learner and adult teacher. Teachers become facilitators while students take on new roles of responsibility as peer teachers and teaching assistants. There is less emphasis on discipline as a primary method of classroom management and more emphasis on student interest as the motivating force for engaging in learning activities. The recognition of multiple intelligence and learning style differences demand a variety of instructional approaches.

In the assessment of the curriculum and instructional methods, various forms are developed in correspondence with an understanding of what the teacher wishes to explain about the learning process or the condition of the learner, and how the learner demonstrates understanding of acquired knowledge (see Table H.5).

Table H.5

Characteristics of Assessment in Two Ways of Knowing

Old Characteristics	New Characteristics
Quantitative	Qualitative
Standardized tests and measurements	Life histories, portfolio, projects
Reproduction of knowledge	Demonstration of knowledge
Externally imposed	Internally developed
Time of task	Meaning of task

Assessment is developed appropriately in line with the envisioned student outcomes, the curriculum subject matter being taught, and the instructional methods that are specifically designed to achieve both learner outcomes and accommodate subject matter. The forms of assessment are an integral part of the improvement process on instructional practices. Assessment is not regarded as an evaluative tool for discrediting either student or teacher performance, but rather as an evaluative tool that can be adopted as part of the reflective learner process (Pearce, Pease, Copa, & Beck, 1991).

Organization and Partnerships

Shifts in notions of the organization of the institution surround issues about social principles of democracy and the relationship of the individual as a part of the whole. The overall structure of the school organization is only a part of a larger concern. The structure also represents the collective values of its members, the institutionalized norms that guide the functioning habits of its members, and the ways in which the organizational rules are established to maximize a fair distribution of responsibilities and benefits to its membership. Also of concern is the nature of the relationships to external community partners.

The traditional model of school organizations is based on the factory model for workers (see Table H.6). Roles and responsibilities are specified exclusively of persons' understanding of the whole culture of the organization. Individuals are functionaries to the mechanical workings of the organization and are rewarded according to their status in the work place, as opposed to their achievements or work contributions to the organization (Pearce, Copa, Pease, & Beck, 1992).

Table H.6
Characteristics of Organization in Two Ways of Knowing

Old Characteristics	New Characteristics
Factory model	Shared ownership
Traditional hierarchy	Rotation of roles and responsibilities
Super organization	Collective organization
Functional relationship of parts to the whole	Intentional relationship of parts to the whole
Organizational profit	Mutual benefit to organization's members

New designs for organizations view individuals as empowered in their positions by virtue of their varied distributions of responsibilities in a diversity of roles. Decision making is a mutually-shared responsibility in which all persons partake and grow.

The considerations about school partnerships include rethinking the nature of the relationships that schools have with outside organizations in terms of members' motivations, their needs, and the postures that are taken in joint ventures (see Table H.7).

Table H.7

Characteristics of Partnerships in Two Ways of Knowing

Old Characteristics	New Characteristics
Service delivery model	Mutually benefiting partners
Money, resources	Shared visions, ideas, goals
Short-term convenience	Long-term commitments

Schools traditionally follow the service delivery model, whereby the school reacts to the demands of the outside agent. Schools all too often are seen as charity cases whereby money or some form of donation is the main motivator for their relationship with businesses or community organizations. Schools are reactive to states of emergency and crisis and their solutions are often short-term and short-sighted.

The partnership model in this project includes parents and families, business and industry, other schools, community-based organizations, and individuals in relationships with students and teachers. In this model each plays a much more active and responsible part in the educative process, the shaping of the curriculum, and the commitment to lifelong learning conditions of students. What holds partnerships between schools and outside organizations together are shared ideas and joint teaching practices in the education of students and a sense of collective responsibility for their future as member citizens of society (Karls, Pease, Copa, Beck, & Pearce, 1991).

Desired Staff Characteristics

The importance in understanding these philosophical assumptions underlying the paradigm shift and how they are manifested in thinking and taken-for-granted knowledge about the workings of the comprehensive school was demonstrated by members of the Design Group. Following a presentation of the above information, Design Group members were asked to suggest desired characteristics for future staff members in a New Designs high school. Although members were not asked to direct their comments towards any one area, their suggestions have been grouped accordingly.

Learner Outcomes

- Flexible about learning new ways to do things
- Self-confident, not afraid to fail
- Curious
- Multi-cultural, cross-cultural sensitivity
- Good interpersonal relations
- Scholar, competent researcher who loves learning
- Open to people's ideas
- Sense of humor
- Listener
- Altruistic
- Intellectually humble
- Pro-active change agent
- Has many interests

Learner Process

- Reflective in self-assessment and knows what practices work in the general world and specifically what goes on in the classroom
- Is an *out loud*, reflective thinker with students and in front of students and faculty
- Personalizes learning for the self and the students
- Knows how content is used in real life
- Holds all students to high expectations
- Pedagogically competent

Organization

- Zest, enthusiasm, a sense of mission and shared mission
- A *sharer*, unselfish with colleagues
- Facilitator of teams
- Knowledge of changing nature of work & work places

Partnerships

- Evidence of involvement in community activities

Staffing Design Specifications

The staffing specifications below include the staff characteristics and the conditions under which these are appropriate for the types of high schools envisioned in this project. After taking into consideration the three principles and identifying characteristics of the paradigm shift, the necessary or sufficient conditions will be suggested as guidelines and necessary qualifications to those conditions. The recommendations will not pertain to traditional, formal requirements. Such formal qualifications that can be identified are: (a) the number of college courses completed in the teacher's primary subject, (b) whether the primary subject was a major or a minor in college, (c) whether or not the teacher was certified in the primary subject, and (d) number of years of teaching experience (Pascal, 1987). Rather, the recommended design specifications relate to the qualifications of the staff in relationship to other aspects of the new design.

Learner Outcomes

Conditional

The staff, either individually or collectively, ought to have all of the characteristics and qualities in character and conduct that are set as expectations of the high school graduates. In other words, whatever is stated as learner outcomes, so ought to be ways of being and acting that are modeled by the staff as they assume respective roles within the school organization. This corresponds to the notion of establishing ideals about an educated person.

Outcomes need to reflect an ideal world community of learners in the new school organization. It needs to be inclusive of all persons who participate in the internal organization of the school as well as partnerships with those located in the larger community—local, state, national, international.

Guidelines

1. In the selection of staff, three characteristics and qualities in character and conduct may be sought after individually or collectively. Individual may be selected to the staff because they have: (a) a unique quality that others do not have, (b) a collection of attributes that reflect the educated ideal, or (c) qualities that complement or balance out other staff members' characteristics.

2. Ideally, staff should be representative of an *ideal-real* world. Equity and balance in the staff selection according to race, ethnicity, gender, age, physicality, economic, and social background should reflect a *world community*. Therefore, individuals should be recruited from local, state, national and international locations.

Desired Characteristics

1. Staff should have instilled in themselves the love of learning.
2. Staff should honor, respect, accept, and encourage diversity.
3. Staff should enjoy working with people.
4. Staff should be life-long learners.
5. Staff should be self reflective and conscientious in attempts to translate ideals into practice.
6. Staff should have and enjoy discussing educational philosophies and pedagogues as they relate to their everyday work and lives, and be well versed in the intellectual traditions.
7. Staff should see themselves as historical beings that are effective parts of a larger whole.
8. Staff should be global thinkers.
9. Staff should have a sense of moral human decency and compassion for humanity.
10. Staff should have a sense of intentionality about their actions and an appreciative sense of meaningfulness about their life.

Learner Process

Conditional

The learning process involves looking at the curriculum, instruction, and assessment as interdependent and interrelated activities. This triad is fundamental to the educative conditions for successful attainment of learner outcomes. Staff members should understand how to look at curriculum, instruction, and assessment as integrated and independent activities.

Guidelines

Curriculum: The staff should know how to construct, research, develop, and write interdisciplinary and integrated curriculum that includes the recognized standards (outcomes, objectives, goals) of the high school, local district, state, subject matter, and school partners.

Desired Characteristics

1. Teachers should be willing and able to work with other teachers and staff members in the design of the curriculum. Curriculum could be written by interdisciplinary teams of staff from either the same school or as products of interschool exchanges with other teachers (New York City Board of Education, 1983-1984).

2. Teachers need to know how to construct integrated curriculum.

3 Teachers need to be knowledgeable about multi-disciplinary approaches to subject matter.

Guidelines

Instruction: The staff should have background knowledge of methods, strategies, and techniques of instruction, and their appropriate fit to the focus of the curriculum or aim of the lesson. Classroom management should utilize forms of instruction and motivation that reflect the educational values that are implicitly or explicitly expressed in the desired learner outcomes. Staff members should work together cooperatively and collaboratively as teams in the instruction of interdisciplinary and integrated curriculum.

Desired Characteristics

1. Teachers should have a repertoire of pedagogical strategies of instruction available and ought to know how to fit certain methods and techniques to specific areas of the subject matter.

2. Teachers should be open to learning new ways of teaching from other colleagues.

3. Teachers should be willing and open to team teaching experiences.

4. Teachers should be able to use instructional techniques that reflect learner outcomes.

Guidelines

Assessment: The staff should know how to develop forms of assessment that account for curriculum content, evaluate the effectiveness of instructional methods, and account for both individualized and collective learner outcomes. Teachers need to understand that forms of assessment are teachers' self-reflective tools for understanding and enhancement of their own craft, as well as ways of monitoring the developmental process and outcomes of their students.

Desired Characteristics

1. Teachers should know how to develop forms of assessment for evaluating integrated curriculum.

2. Teachers ought to know how to develop forms of assessment which they can use as guides to their own improvement.

3. Teachers ought to be self-reflective learners in their approach to teaching. For example, in the classroom students might have open discussions about the course and their own perceived expectations and needs.

Organization

Conditional

The organization of the high school staff should reflect a decentered position. The notion of decentered implies the taking of perspectives of other people in the act of decision making. Within this position, people carry out multiple and alternating roles and in which collaborative decision making is the norm.

Guidelines

1. There needs to be a consideration about how staff will rotate their positions within the school (Brown, Reich, & Stern, 1991).

2. The workload should be distributed in ways that are fair and equitable.

3. Staff selection should be appropriate to the subject matter or job responsibilities that are defined for them (Northwest Regional Educational Laboratory, 1986).

4. There should be a consideration of the gender balance of the staff and a placement of staff in positions that are also non-traditional.

5. There should be a consideration of special populations, such as the disabled and mentally disturbed in the selection of new staff. The aim is to have a total representation of society's population in the composition of the staff as models for students to learn from and about (American vocational Association, 1985; Roberts, 1984).

6. The balance of staff who represent both traditional and non-traditional vocational careers and occupations is important (New Hampshire State Department of Education, 1985)

7. Counseling staff might include students, parents, teachers, administrators and other staff as part of their work load.

8. Staff in administrative roles should be reflective *philosophers in practice* and base their management practices on a shared understanding of an educational philosophy and the aims of the school.

9. Teaching, administrative responsibilities, and policy making should be shared and alternated among the staff (Hinders, 1989).

10. Administrative responsibilities must extend to an understanding of the culture of the school and how to unify staff under a common mission and commitment to a coherent philosophy of education (Firestone, W. A., 1987).

11. Administrative staff needs to be collectively aware and critical of its own abilities to carry out appropriate management actions that accurately express the meaning of their commonly held educational ideals.

12. Staff ought to have a sense of themselves as a part of a larger collective work place in which they feel some sense of obligation.

13. Full and part-time staff should have the same equal recognition in terms of decision-making about what goes on in the school (National Center for Research in Vocational Education, 1990).

14. The naming and titles of the staff composition of the school should represent the essential value and desired intention of their mode of functioning in the school and reflect the philosophy of the school.

Desired Characteristics

1. Staff should be flexible, open, and adaptable to learning new roles and responsibilities besides ones in which they are specifically trained.

2. Staff should have background experience in working in a variety of settings in one or more careers.

3. Staff should be open-minded in understanding and recognizing others' points of view.

4. Staff should know how to adopt a role as mediator, facilitator, and leader in the group organization and have experience in these roles.

5. Staff should be willing to learn all aspects of schooling from all job positions.

6. Staff should be positively motivated to think constructively about problems at work, how to make improvements in work processes, team-based, project-oriented, problem-solving and decision-making about all aspects of the work place.

7. Staff should have the desire and inclination to become involved in collective decision making.

8. Staff should have a sense of their own autonomy and desire to be inclusive in problem-posing, question-posing strategies.

9. Staff should be open to opportunities that increase the value of their own capacity to mutually learn and benefit from others.

Partnerships

Conditional

Partnerships represent a larger world community of stake holders who share an interest in linking the real world of work with school activities. Partners should be integrated into the very fabric of the school through shared decision-making in establishment of learner outcomes and in the curriculum planning process.

Guidelines

1. Teaching, counseling and administrative staff should reflect current practices in business and community organizations.

2. Partnerships should be encouraged with the aim of constructing long-term relationships as mutually benefiting and interested in the education of youth.

Desired Characteristics

1. Staff should have knowledge, skills, and work experience in the area of community partnerships that he or she is responsible for in the school.

2. Staff ought to include members of community organizations or as individuals who participate in an educative function in roles with students in learning situations both inside and outside of the formal educational setting. Responsibilities ought to be mutually shared and understood in educational terms.

3. Staff should participate in community learning opportunities and create opportunities for the community to be involved in the learning process.

Staff Development

Staff development programs are often designed as isolated and individual inservice workshops that are organized conveniently around high school staff's student days off. Staff development also often is seen as the individual's responsibility whereby one is required to take courses at the local college or university in order to maintain certification status. In the new designs for comprehensive high schools, staff development is taken as a collective responsibility of all members of the staff. It is integrated as part of the formal and daily informal operations of the organization. The school needs to be organized to provide continuous, professional development for all of its staff members.

Conditional

Staff development is a shared responsibility of all members of the staff working together in the combined roles of teacher/learner in a commitment towards each person's enhancement of personal identity, intellectual/professional growth, and social consciousness in the collective identity with others and a larger world community.

Guidelines

1. Those who participate as staff developers should not only include all members within the school, (e.g. administrators, administrative staff, classified staff, faculty, students, part-time faculty and support staff, student teachers, community volunteers, parents) but also partnership members in the community. Creative forms of staff development that utilize this relationship among partnerships should be encouraged (e.g., local university courses, parental involvement on advisory committees, joint participation in the planning and carrying out of cultural events) (Calviera, 1988).

2. Careful planning for formal development programs (i.e., series of workshops, lectures, demonstrations) ought to be managed with the interests of all—both full and part time—staff (Black, 1990). A follow-through should be put in place to evaluate how staff implement what they have learned in the classroom.

3. Partnerships should be considered as opportunities in which not only students gain training in the real life of the work place, but also as a place where staff can constantly upgrade their skills and knowledge. Exchanges between staff and business employees in their work roles should be a viable alternative to the inadequacies of the traditional inservice training arrangements.

4. Staff development should be consistent with the aims of the new design philosophy of education and schooling. It should be viewed as a routine part of the daily functions within the school that encourages a culture of professionalism.

5. Staff development should include topics that are not only related to professional, curriculum, and pedagogical interests, but also be educational in a way that provides staff opportunities to expand their understanding about the conditions of their school and perspective ways of managing those conditions, the demographics of their student population, current issues in education, the history and cultural values of their community (Bhaerman & Kopp, 1988).

6. A program for new staff should be in place for understanding the basic philosophy of the NDCHS and the link between staff activities and practices with that philosophy of schooling and education (Barnes, 1990).

Desired Characteristics

1. Staff should be conscientious about their own professional development.

2. Staff should be willing to collectively plan for their own long-term professional development and be selective of activities that benefit both individual and collective group needs.

3. Staff should have self-critical and self-reflective attitudes towards their own professional improvement.

4. Staff should have experience in constructively evaluating and learning from their colleagues, yet conscious of their own unique contributions that they can make towards the betterment of the NDCHS as a whole.

5. Staff should have the desire to keep up with the current progress of their area of subject matter and the contemporary issues in educational reform.

A general statement regarding staff development is that a development program should be in-place as a major part of the routine functions of the new high school. Teachers should also see themselves as everyday life-long learners.

Concluding Critical Issues

The process of conceptualizing ideal staff characteristics for a new high school has implications for the future selection and development of the staff members. The principles, conditions, and specifications in this paper were developed and influenced by the paradigm shift from positivistic to interpretive and critical ways of knowing that is evident in the broader context of educational reform. The specifications should be used as a starting point for local educators as they begin to discuss the staff and staff development issues. Other significant questions are likely to surface during those discussions.

One of the major issues that needs to be creatively explored is how the selection process of the New Designs staff should proceed. Very little is learned from traditional job application forms in terms of what the applicant's educational values, or views about education and schooling, nor how these would be manifested in practice.

Some alternative ways in which individuals can be interviewed are: (a) Give a case study for the applicant to read and ask how they would analyze the case study and go about making decisions relevant to the problems perceived; (b) invite applicants to attend a school function where there will be opportunities for them to take responsible roles and observe their actions in relationship to the group; or (c) conduct a reflective interview with the applicant about events, persons, occasions that were meaningful and influenced the decisions to become an educator.

A second issue for further discussion is whether is it possible for the existing structure of the comprehensive high school to be successfully restructured according to the recommended design specifications? If not, and an entirely new school structure is deemed most desirable, location selection will become critical. The location of a prototype school will influence all of the other decisions.

Finally, educators should ask who should manage a staff development program that is experimental, experiential, reflectively self-critical, and reconstructive in nature when, more than likely, few individuals would claim to represent all of the desired characteristics. For example, many individuals would have to be trained in such desired characteristics as the ability to construct integrated curriculum, and the practice of decentered, rotating roles and responsibilities.

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APPENDIX I

Learning Technology: Enhancing Learning in New Designs for the Comprehensive High School

LEARNING TECHNOLOGY: ENHANCING LEARNING IN NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

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LEARNING TECHNOLOGY: ENHANCING LEARNING IN NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

The high technology transformation of schools that many predicted a decade ago has not materialized. Looking around a typical high school today one would see little changed fROM the early 1980s. Educators are quick to point out the barriers to widespread use of technology (i.e., high costs of purchase and maintenance, dearth of appropriate software, lack of teacher training). Some observers believe problems with educational use of technology have as much to do with organizational politics as silicon chips (Sheingold and Tucker, 1990). There is ample evidence that the common practice of simply adding technology can not achieve changes without modification of the other dimensions of school. However, where stakeholders are redefining what goes on within classrooms and school, and rethinking the way teachers teach and students learn, new technology is demonstrating a key facilitative role in the transformation process (Pearlman, 1991).

If the design specifications for the new comprehensive high school are to be realized, the system needs to be viewed as an ecosystem of interrelated parts. Technology must be directed to each of the parts, which collectively give shape and direction to the school. The specifications for these key parts will define the specifications for technology.

Assumption

The revolution in information technology and policy initiatives which grant school choice to consumers are changing both the process of education and the notion of school. Learning is no longer confined to school. Cable television networks (i.e., the Discovery and Learning channels) *how to* videos, and home computers are the beginning proliferation of learning sources made possible through technology. Whittle's Edison Project schools (Walsh, 1992), and other private vendors now on the drawing boards, pROMise a superior education at reduced cost through technology utilization. The new comprehensive high school, in order to survive, will need to consider the implications of a move fROM monopoly to marketplace. For the purpose of this paper educational technology refers to the new and emerging information technologies that connect people and institutions and provide easy access to multiple sources of information, in many forms, at disparate locations making learning accessible, flexible and portable, (e.g., computers, calculators, electronic networks, telecommunications, database, graphics and publishing software, Videodisc, CD-ROM, interactive and satellite television).

The Keystone—Learner Outcomes

The adopted set of learner outcomes are the expressed mission of the new comprehensive high school. Mission provides direction and priorities for an organization. It legitimates what this school will pay attention to, provide opportunities for, and publicly value. These learner outcomes serve as a keystone for design of the other components of the new comprehensive high school. The design group established several specifications for selecting the outcomes (Pease, Pearce, Copa, & Beck, 1991). These same specifications are useful in selecting the technology. These specifications include

1. The learner is the key customer of public secondary schools—their wants and needs are the primary focus.

2. Striving for competency attainment; consistent with outcome based education.

3. Call for balanced attention to all areas of human talent and integrated learning—the academic and vocational outcomes should be integrated.

Implications for Use of Technology

In an outcome-based system students use technology tools (e.g., computers, CD-ROM, telecommunications, video camera) both to facilitate and to demonstrate their attainment of the learning objectives. Teachers use technology to create authentic learning environments. Learning outcomes directly represent the knowledge, skills, and attitudes needed by positive, contributing adults. To accomplish these outcomes, students must engage in worthwhile, significant, and meaningful learning in an environment that closely resembles the environment in which they will be expected to perform as adults. This suggests students will need access to the tools for knowing and tools for doing that are routinely used by adults in an increasingly complex and changing world. Today the tools of informational technology pervade virtually all aspects of our lives. Computers, calculators, electronic networks, telecommunications, data-bases, graphics and publication software, video, CD-ROM and many others are integral fixtures in the production of information, solution to problems, and providing of service. The challenge is to teach use and engage students in the use of these tools as learning resources.

As in the workplace, home, and community much of what students do will be collaborative and project-based. To stimulate collaboration and help students acquire the necessary skills, teachers might employ groupware. Using *groupware* for writing-production, students would be encouraged to brainstorm across a network in a conferencing mode and then to write documents collaboratively. Students joining the network could participate in ongoing discussions about books, current events, environmental problems, or areas of mutual concern. Group tool technology creates a collaborative environment for shared thinking on projects. Collaborative, project oriented education quickly transgress formal academic boundaries. Integrated curriculum becomes the norm. Integrated courses might well begin by presenting a final exam project that requires demonstration of competency on challenging tasks than don't have a single solution. Involvement in multimedia productions (e.g., "Foxfire" on family, video almanacs of community, or international, interdisciplinary telecommunication projects with an Antarctic expedition) require performance activities that are authentic rather than contrived. Working together, vocational and academic teachers could develop projects around which to organize units and courses. Teachers would see their mission as joined. Further, combining classroom work with service or social action projects immerses students in consequential activity for which the proof of what they have learned is in what they produce. For these projects, students can rely on a repository of information and technology to match their information needs and presentation styles.

Educational Technology Specifications

In an outcome-based system students use technology tools to both facilitate and demonstrate their attainment of the learning. Specifying technology for such a system requires we ask these *smart* questions:

1. What technology can be utilized to increase the productivity of the student as they work toward attaining the learning outcomes?

2. What tools will foster student's multifarious exhibitions of competencies associated with the outcomes?

The recommended specifications include

(a) Access to the same personal productivity tools used to increase the effectiveness and efficiency of adults in the workplace, home and community (e.g., computers, printers, spreadsheets, databases, CAD systems); and

(b) Access to multimedia tools (e.g., computers, videodisc, CD-ROM, videocassette, recorders, video cameras) for information retrieval, manipulation, knowledge production and presentation.

The Signature—The Learning Community

In an effort to create a stronger sense of community in the high school, the design group proposed *the learning community* as its signature. The learning community was selected because it can bring to the new school, a sense of place, of individual identity and of group solidarity. It is worth noting that the design committee suggested the learning community have some *form of representation*, which would give it public status. These characteristics of the learning signature are also useful in defining the specifications for technologies in the new comprehensive high school.

Implications for Use of Technology

The most important benefits technology can bring to the learning community is venue and opportunity for interaction, collaboration, and information exchange. An electronic network would make it possible for students at different computers and in different locations to work at the same time, on the same projects. The merging of local area networks (LAN) and telecommunications can connect students to networks that span the globe. So, no matter where they are located, networking can give students instant access to virtually any information source anywhere in the world.

When local community is of primary concern, telecommunications can offer students valuable links with social, commercial, governmental, and educational resources. Students engaged in helping to resolve real problems in their community could have access to valuable community resources such as the science museum, a college reference library, business marketing center, health clinic, art museum, Environmental Protection Agency, citizens watch group, or Department of Natural Resources. Students could initiate on-line forums of discussion about community issues or provide access to services for family or neighbors who don't otherwise have convenient or informed access. Through this technology the school becomes a vital meeting place for a host of community services. Additionally, students finding it difficult to meet face to face with out-of-school resource people (i.e., parents, business people, scientists, social workers or artists) can talk conveniently on line so they become an extended reference rather than a brief field trip acquaintance.

Within the school, telephones in the classroom can facilitate closer collaboration of teachers and parents. Local community cable channels can provide school outreach programs and town meetings. Voice mail can provide teachers an opportunity for leaving mail messages for parents and parents can leave questions and concerns for teachers. Using the local area network, Electronic mail (i.e., E-mail) can enhance student-to-student, teacher-to-student, and teacher-to-teacher communication.

Educational Technology Specifications

The learning community describes the signature of the new school. The *smart* question is, "How can technology establish community among teachers, students, parents and others?" Technology can provide venue and opportunity for local, regional, national, and global communications through local and wide area networks. The recommended technology specifications are as follows: (a) an installed "Backbone" network providing any user with access to almost any station on the network and to resources beyond the school through telecommunications; (b) network modems, printers, and other input/output devices strategically located so that fewer peripherals serve more users; (c) telephone lines installed in every classroom, media center, and productivity center; and (d) electronic and/or voice mail accessible by students, staff, and community.

Learning Process

The learning process describes the curriculum, instruction, and assessment needed to effectively address the learner outcomes. These three dimensions are interrelated and mutually dependent. The curriculum defines the areas of study students will encounter and therefore the modes of thinking they will employ. Pedagogy provides the means through which the curriculum is made meaningful to the learner. Assessment tells students, administrators, teachers, and community what is paid attention to in school. The learner specifications which defines these three dimensions also delineates the technology to support them.

Educational Technology Implications

Technology can catalyze the learning process in several ways. The first is by providing an information system to manage information associated with the learning process; the second by enabling the conditions for authentic achievement. An instructional management system enables curriculum, instruction, and assessment to be developed and aligned with each other. Through design, analysis, and monitoring of curriculum and instructional programs practitioners can help assure the mission of the school is being expressed and operationalized in instruction and assessment of learner outcomes. The integrated, student-centered curriculum—suggested by the learning outcomes and specifications for the learning process in the new high school—present unique problems and opportunities for assessment. Learning outcomes focus attention on results. Assessing these results often requires more complex measures of performance than standardized, multiple choice tests. Authentic assessments require performance that produce richer and more meaningful results than grades but may not be communicated as easily.

The student performance tracking feature of instructional management systems allows for development of learner profiles where individual data points can be examined and graphed against exit outcomes over any time period. These highly personalized learner profiles reflect student competencies and provide documentation of where, when, and with what success students encountered learning outcomes. Learner profiles can then become part of a computer-based, personalized management system designed to help students, parents, and teachers work together to develop and manage students personalized learning plans, goals and schedules. Student portfolios and exhibitions, both produced more effectively with technology, can also communicate achievement. For example, videotape portfolios provide an excellent tool for use in evaluation of speaking outcomes. Through video, multiple evaluations are possible with students, peers, teachers, parents, and community able to participate in the evaluation process.

Technology also enables some of the contextual conditions necessary for authentic achievement. The intellectual work of authentic achievement often involves tools. Many of the tools of technology are built into the lives of today's students (e.g., computers, video, television). These tools can provide a personal, active, and emancipative learning process. There are many technology-based products specifically designed to help disabled students operate computers using modified input devices like non-standard keyboard or voice activated switches. Others are designed to strengthen age and grade appropriate communication, academic and social skills. The multimedia tools of technology reach all the senses and can be matched to the learning styles of individuals. These tools encourage use of multiple intelligences and validate self expression through words, images, and sound. Using these tools allows the learner more control and more voice in the learning process. Students gain a sense of ownership since they actually create what they learn, and in the act of creating become active and experiential learners. As students create they often want to share what is being done with others. Authentic intellectual work is often collaborative. Microcomputer networks, groupware tools, and online data exchange through telecommunications provide place and opportunity for interaction, collaboration, and peer review; a community of learning.

Educational Technology Specifications

Technology can catalyze the learning process in two ways. First by providing an information system to manage information associated with the learning process and second by enabling the contextual conditions for authentic achievement. Although implementation of a student-centered instructional programs including outcome-based education have the potential to greatly increase the information load, the learning process specifications provide parameters for what is to be managed. The *smart question* for choosing an informational management systems is, "What information is necessary to gather and manage to realize these specifications?" Multimedia technology encompasses a range of possible applications as varied as it elements: full motion video, still images, animation, computer graphics, text, and audio. Since there is no one option specifications for multimedia tools must be decided based on, "What is to be accomplished and by whom?" This would include the following: (a) an open, interactive, distributed, instructional management system designed for monitoring alignment of curriculum, instruction and assessment and student performance tracking; (b) a management system that helps students, parents and teachers work together to develop and manage students personalized learning plans; (c) access to multimedia tools; and (d) access to a local area network (LAN) merged to worldwide telecommunication networks.

The Learning Organization

Learning organization specifications address the organization of learners, learning setting, learning process, learning time, and learning staff. These specifications collectively define the structure of the new comprehensive high school. Structure defines the organizational framework within which the mission of the school is pursued. Eisner (1988) believes than when structure and mission are in conflict, it is structure rather than mission that is likely to dominate. Terry (1988) suggests that if one perceives a particular organizational problem to be at the root of a problem, its fundamental sources is the next level up. In his model, technology, viewed commonly as a resource difficulty, is actually a structure problem. Aligning technology with the specifications for the learning organization supports mission and by doing so prevents technology fROM simply being *added on*.

Implications for Use of Technology

Technology can provide students the flexibility of learning time, learning opportunity and learning plans called for in these specifications of the learning organization:

1. Flexible scheduling of learning time to encourage and support reaching leaner outcomes through a variety of learning strategies and to allow a concentrated effort when appropriate.

2. Maximum opportunity to change direction and focus as the student moves toward completion of high school.

3. Involvement in a planning process to reach learner outcomes in a way that is responsive to her/his needs and interests. This planning process should result in a flexible learning plan for each student which is reviewed periodically.

Flexibility of learning time entails exercising some control over the study topics, pace and procedures of learning. Instructional Learning Systems (ILS) can offer the opportunity for independent learning apart fROM the classroom. An ILS is a hardware/software system in which students' computers are networked to a central server that has curriculum software and a management system to track student performance. Instructional Learning Systems are currently available fROM Computer System Research (CSR), WICAT System, Computer Curriculum Corporation (CCC), Josten Learning Corporation, International Business Machines (IBM), and WASATCH Education Systems. Choosing an ILS learning strategy, students would register for courses that cover up to several years worth of study. Once in a course the system adjusts difficulty of the materials based on the responses of the student. Difficulty increases as the student becomes more proficient until competency is reached. Students are able to select optional tutorial help selections at will. Many of the lessons require outside reading material and activities and emphasize a learning process of discovery rather than drill. Some lessons include engaging, interactive computer simulations, and a powerful set of on-screen tools including a notebook, scientific calculator, glossaries, mail, word processor, and graphing utilities. Place holders in the system allow students to exit the system and reenter where they left off independent of time and without being restricted by prerequisites or curriculum tracks.

Opportunity for the learner to change learning direction and focus is also afforded by the technology of *distance education*. Two of these technologies, satellite and two-way interactive television, provide instruction by teachers transported to the student. Two-way interactive television is suited for distance learning projects that span small geographic areas. Rural school districts are using two way television to transmit audio and video signals between participating classrooms located within instructional cooperatives. Depending on the location of each school, the signal may be sent via cable, microwave, fiber optic, or low power UHF transmission. Under this system every classroom is equipped with television monitors and video cameras are positioned to see all the students in that class. In effect every participant can hear and see every other participant just as they would if they were all in the same room. As an alternative to establishing and managing the facilities to produce and deliver high quality, two-way television programming, a number of schools have turned to a state wide or multi-state satellite networks for delivery of effective distance learning programming. In these systems a satellite dish or uplink beams live instruction over a wide geographic area. Students receive instruction via live video and interact with the teacher by toll free phone, facsimile, voice and E-mail. These technologies provide additional learning opportunities for students beyond the borders of the school building.

The organization and management of information collected about each student in the time independent, opportunity robust, learning organization specified for the new high school is impractical without the use of technology. Computer-based personnel learning plans (PLP) can be used to collect, organize and present student portfolio information. Portfolio information offers a richer understanding of students through identification of goals and aspirations and a clear and detailed picture of strengths and weakness. Portfolios allow recording of observations of a student, evaluations of her work, as well as actual samples of oral, written and graphic projects. Students can use the PLP to evaluate their own progress toward goals they have selected. Information in the PLP can be easily updated and shared with students, counselors, administrators and parents.

Educational Technology Specifications

Technology can provide students the flexibility of learning time, learning opportunity, and learning plans specified for the new comprehensive high school. Instructional Learning Systems (ILS), satellite, and two-way interactive television provide students with maximum learning opportunity and flexibility in learning time schedules. However, they are expensive. To keep fROM investing limited budget resources on inappropriate technologies, *smart* questions involve a needs assessment process to justify installation. The assessment process should focus on identifying the instructional, staff development, inservice and any community and adult education needs of stakeholders. They should also identify any local, university, vocational, or training center to which they could gain access to meet some of these needs. Since distance education is involved, participants may also identify local, regional or national expertise and resources that would help meet those needs. A school participating in this process would use the results to decide on which technologies, if any, to install. Technology specifications for the learning organization should include: (a) an installed satellite and/or two way interactive television if justified by a needs assessment process; (b) an installed computer-based instructional learning system (ILS) if justified by a needs assessment process; and (c) access to a computer-based, personal learning plan (PLP) management system.

Learning Partnerships

The learner outcomes, process, and organizations specifications make it necessary for learning to involve partnerships within the school and among the school and other organizations. Access to and use of educational technology should be a common goal and shared responsibility of learning partners.

Implications for Use of Technology

The current work processes of U.S. and international corporations demand that students master basic skills, possess higher-order thinking competencies, have the ability to work collaboratively and use technology to solve work-related problems.

The design specifications for the new comprehensive high school support these goals. But, like other public schools, it may not have the financial resources to buy the latest educational technology equipment to attain them. Motivated by the need to help students acquire the needed skills for the workplace of the future, the school can form a partnership with local business that helps them gain access to educational technology tools they otherwise may not be able to afford. Both business and school could benefit through graduates who have been afforded an opportunity to gain the skills needed to make them contributing adults.

In addition to this long-term benefit more immediate gains are provided where business opens it training centers to student or schools, using financial support fROM business, develop multimedia training centers, which they run in the evenings for the benefit of employees. In this case schools acquire educational technology equipment and software for student use and business gets an opportunity to provide training for their employees. In such training centers one might find CAD systems, computer networks, engineering software, and multimedia equipment. Students would use this technology to work on *real* problems—some of them identified by the businesses that provided the technology. In other instances the school may purchase the equipment but maintain and upgrade it through fees charged to companies who send employees for training.

Educational technology also provides the opportunity to bring community into the school as a partner in improvement. Evening programs and classes that make computers, electronic networks, telecommunications, CD ROM, and interactive television available for community use piques interest and breaks traditional attitudes and misconceptions about school as well as offering people something in return. Through this partnership the community as a whole benefits fROM a closer tie to school. Similar partnerships of shared technology resources related to mutual goals and responsibilities can be made between the school and universities, vocational schools, or regional and state educational cooperative units.

Educational Technology Specifications

Access to and use of educational technology should be a common goal and shared responsibility of learning partners.

Learning Staff

Experience has taught that technical innovation alone will not bring about educational transformation. An institution's capacity for change is dependent on the quality of its people. Although the learning staff specifications for the new high school have not yet been identified, technology integration suggests some of these qualities will be needed for successful membership:

1. Change agent: Serendipity and uncertainty play a role in the use of technology. Experience has taught us that real technology integration brings about dynamic changes in both instruction and learning.

2. Collaborator: The connections provided by technology can diminish the isolation of teaching and learning. Technology will provide opportunity for working with colleagues on-line as well as in person.

3. Coach, mentor, facilitator: The access, manipulation and production of information will be greatly facilitated by technology. Time will increasingly be used to ask the questions, pose the problems and provide the authentic learning environment which will help students convert this information to knowledge.

4. Researcher: Their part in the community of learners will require engagement in reflective practice. Some of this "action" research will involve identification of effective new technologies or technology mediated learning.

5. Information manager/decision maker: Technology will put information and information tools in the hands of learning staff. Empowering them as decision

makers as they plan, assess, deliver and analyze instruction and instructional programs.

Educational Technology Specifications

The following are identified as necessary educational technology specifications:

1. Access to the personal productivity tools would be used to increase effectiveness and efficiency in the workplace, home and community (e.g., computers, printers, spreadsheets, databases, CAD systems).

2. Access to multimedia tools (e.g., computers, videodisc, CD-ROM, videocassette, recorders, video cameras) would be used for information retrieval, manipulation, knowledge production, and presentation.

3. Access to a installed *backbone* network would provide any user with access to almost any station on the network and to resources beyond the school through telecommunications.

4. Telephone lines would be installed in every classroom, media center, and productivity center.

5. Electronic and/or voice mail would be accessible by students, staff, and community.

6. Access to an open, interactive, distributed, instructional management system would be designed for monitoring alignment of curriculum, instruction and assessment, and student performance tracking.

7. Access to a management system would help students, parents, and teachers work together to develop and manage students personalized learning plans.

Learning Environment

Schools are now organized around the work of adults. Specifications for the design of the new high schools suggest it will be organized around the work of students. Where will students work? The school, the home, and the rest of the community? Although design specifications for the learning environment of the new high school have not been identified, some space plus technology relationships are suggested by its keystone and signature.

The signature of *learning community* brings to the new school a sense of place, of individual identity, and of group solidarity. It suggests the adult and student workers in this system will need a multiplicity of spaces such as open areas, small cubicles designed for up to ten participants, larger gathering places and a number of individual and independent learning places. These areas could be zoned to provide schools within a school a sense of identity and connected through electronic networks for a feeling of community. The keystone is represented by results-oriented learner outcomes. Students would use technology tools to both facilitate and demonstrate their attainment of these outcomes and teachers would use them to create authentic learning environments. Because there is no one best way to enable this work, several space plus technology zones could be provided. These zones might include: (a) seminar rooms for small group interaction in which technology is limited to whiteboards for sketching ideas and concepts; (b) production areas containing networked computers with shared peripherals; (c) large workrooms with several multimedia production stations and desktop publishing workstations; and (d) a learner bank stocked with high technology tools and equipment, which can be loaned but is otherwise not available. Classrooms should be designed for teacher and student to maximize technology for knowledge presentations. In these classrooms lighting and equipment would be controllable fROM one central point allowing optimum viewing for each student. Integration of a variety of media (e.g., telephone, CD-ROM, videodisc, data line, videotape, computer projection equipment), would be possible through a computer driven console programmed to allow presenters to control these applications. Video distribution would be fROM a centrally-located source to the classroom via coaxial cable. In conjunction with these spaces would be a presentation area with the same capabilities of the classroom plus data links to access information in real time. These links would include telecommunication systems for distance learning, two-way interactive television and a down link for satellite distribution.

Educational Technology Specifications

Adult and student workers in this system will need a multiplicity of spaces such as open areas, small cubicles designed for up to five participants, larger gatherings places and a number of individual and independent learning places. These areas could be zoned to provide schools within a school for a sense of identity and connected through electronic networks for a feeling of community.

Summary

The specifications for the New Designs for the Comprehensive High School offer an opportunity for successful transformation by removing or lowering many of the previous barriers. Technology, directed to each of the parts that collectively give shape and direction to the school, will provide the critical mass necessary to realize these specifications. This educational technology should include:

1. Access to personal productivity tools used to increase the effectiveness and efficiency in the workplace, home and community (e.g., computers, printers, spreadsheets, databases, CAD systems).

2. Access to multimedia tools (e.g., computers, videodisc, CD-ROM, videocassette, recorders, video cameras) for information retrieval, manipulation, knowledge production and presentation.

3. An installed *backbone* network providing any user with access to almost any station on the network and to resources beyond the school through telecommunications.

4. Network modems, printers, and other input/output devices strategically located so that fewer peripherals serve more users.

5. Telephone lines installed in every classroom, media center, and productivity center.

6. Electronic and/or voice mail accessible by students, staff, and community.

7. An interactive, distributed, open, instructional management system designed for monitoring alignment of curriculum, instruction and assessment, and student performance tracking.

8. A management system that helps students, parents and teachers work together to develop and manage students personalized learning plans (PLP).

9. An installed satellite and/or two way interactive television if justified by a needs assessment process.

10. An installed computer-based instructional learning system (ILS) if justified by a needs assessment process.

11. Access to and use of high technology as a common goal and shared responsibility of learning partners.

12. A multiplicity of spaces such as open areas, small cubicles, larger gathering places and a number of individual and independent learning places. These areas could be zoned to provide schools within a school for a sense of identity and connected through electronic networks for a feeling of community.

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APPENDIX J

Learning Environment: An Architectural Interpretation of a New Designs Archetype High School

LEARNING ENVIRONMENT: AN ARCHITECTURAL INTERPRETATION OF A NEW DESIGNS ARCHETYPE HIGH SCHOOL

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THE LEARNING ENVIRONMENT: AN ARCHITECTURAL INTERPRETATION OF A NEW DESIGNS ARCHETYPE HIGH SCHOOL

Altering the public's image of school facilities may be the single most difficult part of the needed transformation in American education. The American public must somehow come to see that it is possible, important, and necessary not only to transform schooling, but to design school facilities that differ sharply from the traditional school facilities of the past. Research of educational and architectural literature of the past two decades disclosed that very little has been or is being done by either educators or architects on the myriad of design decisions that a responsible architect has to make in the course of designing, renovating, or expanding a school building. This paper will develop some *break-the-mold* school building concepts.

Learning takes place in many different settings. The institution of education uses the setting of the school for focused learning. The success of the school as a *places for learning* depends on its ability to create and support learning opportunities. These opportunities occur both within a school facility and beyond its walls. Therefore the school must also enhance the linkage to settings in the greater community.

It has been suggested by some authorities that all learning ought to occur without schools. Although this is an alternative, the concept of a comprehensive high school benefits from having a place for learning in the following ways:

1. The school as a place is a symbol to offer hope.

2. The school as a central place can be the broker for sending youngsters to and from *real world experiences.*

3. The school can be a place for the socialization of youth.

4. The school can be a place where real world experience are synthesized, analyzed, and understood by the pupils.

5. The school can be an amenable place for exploring self.

6. The school can be a safe place when the individual's welfare is at risk.

When students learn outside the place called school, it is more likely that they will be able to humanize the place called school (Weinstock, 1973). A simple rule of thumb ought to be that whenever you can do a thing better in school, or a place called school, that's where you do it. If you can do it better *out there*, you do it out there.

The other research and synthesis papers which are a part of this project address an approach to structuring education based on the logical progression from general concepts to specific thoughts about organizational aspects of the learning process. This architectural interpretation of a New Designs archetype high school continues the application of that logic to the learning environments. The spaces for learning need to house the activities that will be determined by the educational philosophy, by the goals and objectives, and by the organization of students, staff, time, curriculum, assessment, and instruction. The character of these spaces reflects the values of the community and the needs of the students. Together the definition of spaces and character will lead to the creation of places for learning (Crumpacker, 1992).

"Schooling in America is changing—school design must follow suit" (Prairie School, 1992). This paper follows that statement by: (a) identifying the educational concepts that affect the learning environment, (b) describing how the educational concepts translate into design concepts, and (c) illustrating applications to a real design. Throughout the discussion, comparison is made to the traditional high school designs.

Educational Concepts

The traditional high school design is strongly determined by the daily schedule, which is driven by the Carnegie Unit. The number of classrooms, their size, and their location are a result of efficiently grouping and moving students so they may accumulate their time units. *Outcome Based Education* (OBE) totally changes this focus. When learning is no longer a group of students in front of a teacher every aspect of schooling changes (e.g., pedagogy, governance, calendar, curriculum, assessment, accountability, educational technology). The idea of a classroom of students doing the same thing in the same way vanishes. These changes in virtually every fundamental area clarify why the schools of the past are increasingly seen as unable to prepare today's youth for today's world. Yet the emerging new format of education for the twenty-first century is struggling to be born in nineteenth century buildings.

Schools of the past emphasized an instructional approach of a teacher directing a group of pupils in a uniform manner. This is seen as efficient and results in school buildings that are teacher-centered. The *learning community* concept of this project places the student at the center of the school organization. The OBE philosophy reinforces this approach. Learning now means individual and small groups of students posing questions, generating information from multiple sources, tracking it down and seeing where it leads, manipulating the information, and re-communicating it to others. The teacher—no longer a lecturer—now serves as a keen observer of learning and of her or his own teaching, whose task it is to foster students' thinking. The teacher is changing from the provider of information to a participant observer, mentor, and coach in the learning process.

Another feature of traditional high school design is to create different areas of the building for academic and vocational subject matter. This contributes to a them vs. us attitude. By *integration* of these areas a building layout based on such a distinction is circumvented. This change is also facilitated by the *modernization of vocational curriculum.* Together these two educational concepts allow for new spaces and spatial relationships in high schools.

High schools often are seen as isolated institutions. This perception is reinforced by a *closed campus* operation with students entering at 8:20 a.m. and leaving at 3:10 p.m. Only the main entrance is open during the day. Designs that reinforce isolation feel forbidding and, along with the cellular arrangement of classrooms, are characterized as prisons. Implementing an approach to *partnerships, community service, and other school-community links* will demand a different, more open interface between the school and its surroundings. The new designs will encourage movement to and from the school and its environs. The community becomes part of the school.

Classrooms for twenty-five to thirty pupils work to support the lecture format of instruction although some research has shown that it may not be one hundred percent effective. Education that embraces concepts of *problem solving, learning to learn,* and *flexibility* requires different activities and, therefore, different spaces. The activities become more project oriented and include more experimentation. Supporting these activities are new (and some traditional) types of furnishings, equipment, and technology. The hardware and software of schools become a resource and are used on an *as needed* basis in addition to being used for instruction. Spaces that house these activities are highly accessible.

Another reason to reexamine the traditional classroom is the emphasis on *teamwork*. Cooperative learning research has defined patterns that aid in implementing this concept. Groups that form in size ranging from two to six and gather formally, informally, or as base groups require supportive spaces and furnishings. Although cooperative grouping is done in traditional classrooms—(they have not had much choice)—difficulties exist. The activities of several groups working in a room designed for desks in a row creates audio and visual disturbances. The alternatives are either conference-type rooms or a larger room that allows adequate space between groups.

Approaching *assessments to improve learning* also affects a school's spaces. Individual testing in groups of thirty works in the classroom environment. However, when assessment includes portfolios, displays, and demonstrations optional places are preferred. Every space in the learning environment should provide for these activities. This will vary from small, intimate places to complex large group spaces.

The use of resources is becoming increasingly important in all schools. The traditional high school is reflecting this by building larger, centrally-located Instructional Material Centers and an increasing number of computer rooms. Full implementation of *learning technologies* turns this approach upside down. Electronic access to audio, video, and data information alleviates the need for physically centralizing these resources. A totally decentralize strategy, where each student has access to this information at a workstation, is feasible and desirable. The complications of scheduling and proximity vanish. Computer rooms no longer are required and libraries become either a small space for print media or nonexistent as students use the larger community libraries.

Traditional high schools have large central offices titled *Administration*. These offices were conceived as the control center of the school with rooms for the principal, the assistant principals, the dean, attendance staff, counselors, athletic director, and other administrative staff. Students and parents often find this setting intimidating. By *decentralizing authority* these roles change in both character and location. The result is that the central office becomes smaller and shares governance with the *student council*. Small spaces are provided locally throughout the school in order to increase the involvement of administrators and counselor with the students and teaching staff. These spaces are designed to be inviting and allow for spontaneous meetings among the participants.

All students can learn is one additional idea that affects the spatial design of the comprehensive high school. Traditional schools often provided special facilities for special needs students, alternative settings or the students who dropped-out. Through OBE these students no longer are distinguished because of their learning abilities. They therefore do not have separate places nor the stigma those places generate. As with the administration, the staff needed to assist these students is locally placed and fully accessible.

Design Concepts

To properly design a physical environment for learning, the educational concepts need to be translated into the language of the architect. This is the bridge between the educator and the designer. The following design concepts are that connection.

Personal Workstation

The basic building block of both yesterday's and today's high schools is the classroom. Sized for thirty pupils and, when necessary, having special equipment, these rooms are connected by corridors to facilitate the mass movement of pupils between class periods. This arrangement is primarily for lecture-type instruction. The learner-focused school makes minimal use of this instructional method; and, therefore, it is not supported by the traditional layout. Another approach examined was an assembly of the large, medium, and small group rooms similar, to those of flexible modular scheduling schools. Considering that this approach is only a variation on the traditional high school (i.e., the numbers of pupils change), it is not suitable for the learner environment envisioned in the educational concepts of this project.

The New Design high school environment suggests that the *personal workstation* is an alternative to the classroom, and should be the basic building block of the high school design. In the personal workstation, each student has a place to study and do small projects, keep books, papers, and personal belongings, and connect into the technology network. Each student has a notebook computer. Considering the significance that the usual student locker plays in the high school experience such a personal place will enhance the student's self concept.

Group

The personal workstation is learner-focused, however, it is weak in addressing the educational concept of teaming. Combining the personal workstation with the desire for teaming leads to the idea of a small, flexible *group space* that would accommodate several personal workstations. This building block needs the support of spaces for instruction, production, resources, and demonstration. This arrangement is similar to many real world work settings.

The research on cooperative learning and student teaming indicates that numbers of two to six people in a group work well. Because there is no apparent, perfect number, flexibility to change the group size is desirable. Cooperative learning theories also address the need for flexibility in task, participants, and time. The method to achieve this is to identify formal, informal, and base groups. The first two groupings are project driven while the base group is long term—from one year to the complete high school experience. It is this base group, each with a small, flexibly-arranged personal workstation, which makes up the basic building block of the new comprehensive high school.

The next level of design for the learning environment deals with the organization of the personal workstation groups. In what manner and number will they be arranged? What functions and spaces will adjoin and support the groups? Answers to these issues are driven by educational concepts.

Family and Resource/Production Area

The idea of a learning environment must be both functional and perceptible for it to be meaningful to the participants. Functionally central to the student groups are the activities of accessing resources and producing projects. The space for these activities and the materials contained in the space vary with the number of students being served. Experience in schools that have developed team teaching, interdisciplinary instruction, and multi-disciplinary teams indicate a range from 75 to 125 students as being viable. This allows the faculty to get to know the students and still be cost effective. Resources appropriate to this size of student body include powerful microcomputers, laser disks, CD-ROM, audio/video technologies, and selected software and printed material. Production support includes space for medium-size projects, viewing area, art projects, and tables for the formal and informal groupings. It would also allow for demonstration and display. This space is physically an extension of the group workstations and central to them.

Perceptually it is the unifying element to this medium-size group of students and would double as their assembly space.

Supporting this student body are spaces for small, medium, and large group instruction, laboratory work, staff personal workstations, and private conferences. These spaces along with the personal workstation groups and the resource/production space are identified as the *family*.

Neighborhood

Further development of the learning environment involves the gathering of several families and identifying their unifying, central element. The pattern is the personal workstation group as the basic building block. These are assembled to create the family with its center. The next level uses the family as the building block to establish a group of families with a center. This level (except for a few specialized spaces) can function as a stand-alone high school.

Recent research has supported the idea of smaller high schools. Sizes ranging from 250 to 500 pupils are recommended. With a complimentary educational delivery system, schools this size can offer a full curriculum without loosing the individual student in the mass. Where community culture and demographics require larger high schools, this approach becomes a school-within-a-school strategy.

Neighborhood Commons

The components of this level of organization start with the family. Four families are recommended to achieve the size indicated by research. To establish the sense of a learning environment, the next component is that which is both functionally and perceptually the center. Functions involving all students of a high school are dining, socialization, demonstration, display, and large assembly. A flexible, multiple use space that accommodates these activities is a *commons*. It is of a size and function that support its role as a center and at the same time its casual nature complements the more rigorous center of the family, the resource/production space. As with the family center, the commons is readily accessible from all areas and is perceivable as the unifying element for the four families.

Studios

The support spaces to round out this level of the design include specialized, yet flexible, *studios*; spaces for additional staff including student support services, specialists, and school management; and a technologically advanced, electronically interactive instruction and demonstration room.

The studios are for instruction and production. They are flexible in that each is similarly outfitted with systems for technology networking, electronic power, general and task lighting, water and sewer, air exchange, and special ventilation and storage. Their use would be determined by the curriculum and the corresponding movable furnishings and equipment. This apparatus is plugged in and removed as the curriculum and projects change.

The studio is the focal point of the integrated academic and vocational programs. It is here where projects involving disciplines (e.g., mathematics, language arts, technology, business, agriculture, family and consumer education, art, history, and music) are carried out. There are several of these studios allowing for each one to have a different focus at any one time. This focus would evolve out of agreements among the students, faculty, parents and partnership representatives. This approach and its inherent flexibility allows for a variety of educational delivery systems. Whether the school is departmental, multidisciplinary, interdisciplinary or thematic, the physical environment is not a constraint.

Staff Spaces

The spaces for the staff that are not located in the family are designed to maximize their accessibility to the students. Their role as support to the students, their families, and other stakeholders suggests an environment that is welcoming and friendly—not intimidating. This group is categorized into three functions. The first is the leadership of the school-within-a-school. In addition to the general management function as a primary task, this position has responsibility for the coordination of particular student activities in the larger community. Here the identification, scheduling, and feedback of community partnerships occurs. This includes such things as community service, working in the local businesses and governments, and participation of local people in the activities of the school. Next are the support people usually identified as counselors, social workers, and psychologists. Their focus is to establish a comfortable relationship with the students and their families. Their accessibility is essential. The third group consists of the specialists. Their role is to work with students with extraordinary needs, which would include both physical and mental issues ranging from remedial to gifted and talented. As with the other support staff, their accessibility is essential. In addition to these staff spaces are conference rooms for private meetings.

Electronically Interactive Room

The other major support space is the technologically advanced, electronically interactive instructional and demonstration room. This space has two main functions. The first makes use of technology for interactive instruction. All stations in this lecture like configured space would be equipped with a local area network computer outlet. Students would bring their notebook computers, plug them in and communicate interactively over the network with each other and the instructor. At the front of the room is a large display monitor so all participants can view the electronic dialogue. The second use would be as a formal presentation room where students present their projects and research to their peers and faculty as part of the assessment process.

The gathering of four families, the central commons, and their support spaces defined above is called a *neighborhood*. The neighborhood almost is a stand-alone school; only a few specialized spaces are missing. Also, some communities may require accommodations for a larger student body. In addition, some of these specialized spaces may be provided in the surrounding greater community.

To complete the development of this archetype, certain assumptions must be made. However, in making these assumptions it is important to point out the flexibility and the alternatives that are possible within different settings.

Community-level Spaces

Because size is a major variable, the first assumption made is that the archetype school consists of four neighborhoods in a *community*. This incorporates the strategy of a school-within-a-school. The specialized spaces would serve all four neighborhoods. The neighborhoods become the building blocks of the archetypal school as the families are for the neighborhood. Consistent with the design approach to reflect the educational concept of a learning community, the specialized spaces break down into those forming a centralized, unifying space and those forming the support spaces.

The list for these spaces includes physical education rooms (e.g., gymnasium, weights, swimming pool, and locker rooms); large group rehearsal rooms for music, dance and drama; Auditorium theater for very large group assembly; library; audio/video studio; governance center; community services; and others depending on the community.

Some of these functions can be served outside the school (e.g., swimming) or the school could provide these to complement those in the greater community (e.g., library). The number and size of these facilities also will vary with the number of neighborhoods. For example, a one neighborhood school may not have an auditorium and only a single-station gym. An eight-neighborhood school may have a performing arts center to seat one thousand and an athletic field house. Another possibility is to have several single neighborhood schools spread throughout the greater community that would share a centralized special purpose facility containing all the spaces on the list.

The archetype design of four neighborhoods develops the auditorium/ theater/very-large group assembly function as the central, unifying space. Consistent with the educational concepts, placing emphasis on assessment through demonstration and display, this space is conceptualized as a public *forum*. Auditoriums are often sophisticated performance halls where only special events occur. Hundreds of schools have been designed where this facility is at the far end of the building with a separate public entrance. However, during the typical school day it is closed with the lights off and the doors locked to keep out students. In the comprehensive high school this space is located in the center of the facility and open to maximize accessibility and use. Throughout the day it is used for large group gatherings, spontaneous or planned. Students and public passing through can witness the creation of staging and lighting for plays and musicals. This sharing of the process is as important to learning as is the experience of the final product.

The other components of the high school include an activities area, governance, library, instructional technology, community services, and a school store. The activities area includes those functions requiring some separation due to the nature of the activities themselves. This includes the physical education elements of the gymnasium with spectator seating. Although the assumption could have been that this function can occur in the greater community, it is included here because of the opportunity it provides to involve citizens in the school and the identity given through athletic events. Also included are gymnastics/dance, fitness/weights, and locker room spaces.

The other activity area spaces focus on large group music functions. Facilitating rehearsal acoustical control is necessary. However, these spaces are located in proximity to the athletic spaces to encourage the incorporation of music in the physical education program (e.g., dance and gymnastics).

The governance spaces include not only the overall school management and heath functions but also contain the *council hall*. This room is like the senate chambers in that the appointed and elected representatives meet to govern the school. Represented are students, staff, parents, partnership, citizens and administration. The space doubles as a staff development center.

The library is a more traditional place for books and other printed media. With the decentralization of the electronic information, the development of a large instructional media center is not required.

The instructional technology space serves a new function in schools. It is a center for all the school technology networks and connections to technology systems outside the school (e.g., satellite TV, cable TV, modems to databases). In addition, this area houses a TV studio and a multimedia room for virtual reality explorations.

The community service space provides a place for those functions in society that are evolving in response to the changing demographics and work force. The exact nature of these services has not been defined in this high school. However, they could include such services as medical/dental, therapy, welfare or police liaison. These would vary significantly from community to community.

The school store serves two functions: (a) it provides an opportunity for students to experience the challenges of the world of commerce, and, (b) it will aid in providing the materials and products needed by all students to carry out their various projects. These projects can be complicated and time consuming and the school store will minimize the time needed to secure the necessary equipment.

Summary of Design Concepts

The four neighborhoods, the forum, their support spaces, and the necessary utilitarian building services constitute what is labeled the *community*. The analogy used to identify the different levels in the new comprehensive high school (personal workstation group, family, neighborhood, and community) is intended to not only reflect the hierarchical nature of these spaces but also to aid in disassociating the new design with any preconceived notions of what a high school should be. The intention is to conceptualize a learning environment based on the educational concepts developed in this project. There may be—and should be—other approaches to this challenge.

One additional level in this hierarchy needs to be addressed before the new designs for a comprehensive high school is complete. This is the context in which this learning environment is to exist. Previous statements have referred to this as the *greater community*. Any school project that is to be meaningful needs to be created someplace to serve somebody. This could be in an urban, suburban, or rural setting. It could be in a tropical or frigid climate. It could be in a conservative or liberal culture. The physical design that follows assumes an urban setting in a cold temperate climate and a pluralistic culture with multiple values.

Educationally the completion of the environment depends upon strong connections to the greater community. Part of the students' learning process includes involvement in this community. Time would be spent doing community service, working in local businesses, churches, and governments and bringing some of the community's concern back into the main school for exploration. In addition to this the school building, in turn, offers a symbol of growth and development to the community. This is reflected in the design of the environment in two ways. First, the involvement of the students in the greater community is encouraged and facilitated by each neighborhood having its own inviting entrance between the school and the community. Second, the school as a whole has a main entrance statement, which would be used for the ceremony and rituals that go along with the meaning of educating children so they may enter the adult world as full participants. The complete hierarchy described above is expressed in Table J.1.

Table J.1

New Designs for the Comprehensive High School Hierarchical Organization

Level	Base Unit	Center	Support
Individual	Workstation	Desk	Storage
Group	Individual	Table	Others
Family	Group	Resource/Production	Faculty Group instruction Laboratory
Neighborhood	Family	Commons	Studios Support staff Dialogue room
Community	Neighborhood	Forum	Activity spaces Governance Library Community services
Greater Community	School Community	School	Business Government Commerce Church Artistic

Archetype Design

Given the design concepts and the assumptions described above, the next step in creating an archetype design for the educational environment is to develop a space program. This is a listing of the individual spaces, their number, and their size in square feet. These spaces are organized in the program in a manner that reflects their organization in the school. A major objective of the program is for the total square footage to be consistent with that of a traditional high school to assure that the cost is comparable. The number of students to be accommodated is shown in Table J.2.

Table J.2
Arrangement of Students

Personal Workstation Group	5 students	2 five student groups*
Family	100 students	10 group pairs
Neighborhood	400 students	4 families
Community	1600 students	4 neighborhoods

Note: Groups are paired for flexible grouping of up to ten students.

The following *High School Space Program* brings all the above information into a condensed expression of the facilities needed with the exception of those activities that occur in the greater community. The total square footage of 350,000 square feet is similar to a traditional high school for 1,600 students with an auditorium, and located in a northern climate. The cost of this school would be comparable to a traditional high school on the same site and in the same community.

The prototype design is for a new facility. This provides the best opportunity to develop and illustrate new spatial concepts based on the new educational concepts. With these tools it is both possible and advisable to explore renovations of existing high schools or other facilities to implement the educational ideas. The High School Space Program would hold true for restructuring an existing high school as long as the same assumptions applied (1,600 students with an auditorium and located in a northern climate).

Table J.3
High School Space Program

FAMILY LEVEL (4 @ 100)

Spaces	No.	Area	Sub-total	Total SF
Family				
Group (5)	20	150	3000	
Product/Resource	1	1750	1750	
Large Group (100)	1	1500	1500	
Medium Group (15)	1	400	400	
Lab (20)	1	1250	1250	
Planning/Off (6)	1	400	400	
Storage	1	200	200	
Total (x4)			8500	34000
Family Total (x4)				136,000

NEIGHBORHOOD LEVEL (4 @ 400)

Spaces	No.	Area	Sub-total	Total SF
Commons (x4)				
Dining/Social/Activity	1	2000	2000	
Serving	1	400	400	9600
Shared Studios (x4)				
Studios	4	2000	8000	
Dialogue Room	1	1500	1500	38000
Coordinator (x4)				
General office	1	250	250	
Dean	1	125	125	
Office	1	125	125	
Conference	1	250	250	
Workroom	1	250	250	4000
Learning Services (x4)				
Work Resource	1	250	250	
Offices	4	125	500	
Special Needs	1	500	500	
Special Activities	1	500	500	
Conference	2	250	500	9000
Neighborhood Total (x4)				60,600
Family & Neighborhood Total				196,600

Table J.3 (cont.)

COMMUNITY LEVEL

Spaces	No.	Area	Sub-total	Total SF
Forum				
Cavea (800)	1	8500	8500	
Stage	1	2000	2000	
Backstage	1	3000	3000	13500
Instructional Tech.				
Video Studio	1	1750	1750	
Multimedia Room	2	1000	1000	
Equipment Room	1	500	500	3250
Library				
Reading Room	1	3000	3000	
Workroom/Off/Storage	1	500	500	
Faculty Resource	1	750	750	4250
Governance				
Council Hall	1	1500	1500	
General Office	1	500	500	
Principal	1	125	125	
Offices	2	125	250	
Conferences	1	250	250	
Workroom/Files	1	400	400	
Health	1	400	400	3425
Community Services				
General Office	1	250	250	
Offices	3	125	375	
Conferences	1	125	125	750
Activity Spaces				
Instrument/Rehearsal	1	2000	2000	
Vocal Rehearsal	1	1500	1500	
Ensemble	1	750	750	
Individual Practice	6	50	300	
Storage	2	400	800	
Planning/Office (5)	1	400	400	
Gymnasium (2500 seats)	1	11000	11000	
Gymnastics/Dance	1	5000	5000	
Fitness/Weights	1	5000	5000	
Gym Storage	1	1000	1000	
Training Room	1	750	750	
Men's Locker Room	2	2500	5000	
Women's Locker Room	2	2500	5000	38500
Community Store	1	500	500	500
Food Service	1	2500	2500	2500
Custodial	1	6500	6500	6500
Community Level Total				73,175
Family & Neighborhood Total				196,600
GRAND TOTAL SQUARE FEET—NET				296,775
TOTAL SQUARE FEET—GROSS				350,000

Relationship Diagrams

Relationship diagrams are the next step in the design process. These are based on the space program and the design concepts and form the foundation for an architectural design. They are graphic illustrations of the key room adjacencies. The three diagrams for the prototype are based on the three levels of family, neighborhood, and community (as shown in Figures 1, 2, and 3).

Diagram of a 100-Student Family (Figure 1):

The five student group spaces gather around their center, the resource/production space. The support spaces are at the periphery.

Diagram of a 400-Student Neighborhood (Figure 2):

Four families and their support spaces are united by the centrally located commons.

Diagram of the 1,600-Student Community (Figure 3):

Four neighborhoods and the activity block (physical education and rehearsal) surround the forum with library, governance, school store, community services, and other areas.

School Context and Character

The three diagrams described above form the basis of the plans. However, this is only one aspect of architecture. Two others that must be discussed are: (a) the context or surrounding setting, and (b)the character of the design. The school context or surrounding setting are a central concern of educational facility architects. Actual projects have a real site with specific street locations, orientations, adjoining buildings, and topography. The assumptions made for this project are shown in the drawing labeled *View of an Urban Comprehensive High School* (Figure 4).

The aspect of character of the design deals with aesthetics and spirit of the design. This is what creates that sense of place (Crumpacker, 1992). Full development of character is beyond the scope of the drawings, however some comments can be made. The character of a school will reflect the community's values and will be sensitive to the psychological needs of this age-group of students. The following are some ideas in this regard that are adapted from the ideas of Crumpacker (1992) and Weinstock (1973).

1. *Human scale:* Physical settings must satisfy the need for a sense of identity. That won't be found in the totally illuminated, smoothly air-conditioned, precision-controlled container of space where you can't find the center.

2. *Personal territory:* Students and teachers alike need a sense of their own turf: a personal place to be alone and separate from group pressures, to work, to store and retrieve information and tools gathered for projects in progress.

3. *Spatial variation:* A building should provide options in the size and shapes of sub-spaces so people can gather in groups of two or four, ten or twenty, or one hundred and, in each case, provide the right amount of visual and auditory privacy.

4. *Spatial order:* Patterns of use should not be totally predetermined. The space should permit people to array themselves in relationships natural to communication for the work at hand with allowances for random meetings and room for peer play, as well.

5. *Manipulability:* The environment must allow itself to be manipulated by its users so spaces can be changed (i.e., lamps turned on and off, tools moved from here to there). Functional considerations aside, a facility that allows itself to be manipulated gives its users a sense of ownership.

6. *Access to information and tools:* The management posture must emphasize service. It must make things easily available and invite *hands-on* use.

7. *Environmental feedback:* A school facility must allow its occupants to stamp their presence on it. The builders must be able to accept the graphic presentation of student activities and interests so that it reflects who is inhabiting it and how they are doing. Displays of student work help to build a sense of identity. These displays also make the surroundings more lively and relevant.

8. *Optional seating and work surfaces:* The facility must acknowledge that people work in a variety of natural postures: sitting up straight, lounging, leaning, perching, standing. It should offer a variety of seating (including the floor) and work-surface heights to accommodate various work postures.

9. *Graceful wear and renewal:* Furniture should be allowed to be worn, used up, and renewed. Furnishings bought for qualities of permanence tend to be cold, unyielding, anti-people, and it wears out anyway, becoming more unpleasant as it does.

10. *Work aesthetic:* The look of learning in action is a busy one, with things out and in active use. Although this seems to violate some cultural sense of order, administrators, teachers, and custodians will need to understand that a space by being useful, interesting, and relevant, becomes attractive to its users.

11. *Friendly:* Above all, the new school needs to be a child- and family-friendly institution where all feel welcome and have a sense of belonging in spaces that flow from social and public areas, to smaller work areas, to private spaces that encourage contemplation

Graphic Representation

The graphic representations of the new designs for the comprehensive high school are contained in the eight drawings described below. They represent one interpretation of the educational and design concepts.

Personal Workstations for Groups of Five Students (Figure 5)

The personal workstation is the basic building block of the design. This home for the *base* cooperative group is intended to have a sense of place for five students. The furnishings are modular and can be arranged to suit the occupants. The space maintains a feeling of openness to strengthen the connectives to the family. Each student has a workstation, including a desk with drawer, chair and a computer network connection. The group shares a wardrobe cabinet and a round table for group work. The upper portion of the drawing shows a view of a pair of groups; two groups of five are paired to allow for flexibility. The lower portion shows a plan of three pairs with alternative furnishing layout. The pair on the left could be working as a team of ten.

Plan of a 100-Student Family (Figure 6)

The 100 student family is comprised of ten pairs of groups that are gathered around the resource/production area. Also in proximity is the faculty planning/office. To the top right of the drawing is the laboratory. This would be flexibly equipped for exploration in the various sciences. To the left is the large group room sized to seat one hundred in lecture formation. It can be subdivided for two classroom size groups. Adjacent to this is a medium size group room to accommodate fifteen.

View of a 100-Student Family (Figure 7)

The focus of this drawing is the resource/production space. Connected to the commons (bottom of drawing) the entry passes the planning/office. Except for the skylight, all furnishings and equipment are movable. The example layout shows places for display, tables for group work, high technology equipment, small group video demonstration, accessible resources, art production, and casual gathering at the skylight well. This space becomes both the functional and symbolic image of the family. Each family has its own identity through the displays and artifacts that personalize each resource/production place.

Plans of a 400-Student Neighborhood (Figure 8)

The 400 student neighborhood is a drawing of a first- and second-floor plan of the neighborhood. Because of the assumptions of 1,600 students and an urban setting, the-two story scheme is logical. In a rural setting a smaller school could be one story. The central feature is the commons on the first floor. It is a two-story space and opens to the second floor. To the top of the commons on the first floor is the entry court. The families flank the entry court and have a direct connection to the commons (by stairs for the second floor families). Flanking the commons are spaces for the neighborhood support staff. These are open spaces and are furnished with modular, office landscape systems (not shown). This accomplishes two objectives: (a) as staffing needs change the spaces are flexible to adjust, and (b) all staff need to be as accessible as possible. There are conference rooms for private meetings.

In both the lower right and left corners of each floor are the studios. The studios are for both instruction and production. They are flexible in that each is similarly outfitted with systems for technology networking, electronic power, general and task lighting, water and sewer, air exchange and special ventilation, and storage. Their use would be determined by the curriculum and the corresponding movable furnishings and equipment. This apparatus would be plugged in and removed as the curriculum and projects change.

The last major space in the neighborhood is the *dialogue room.* It is the technologically advanced, electronically interactive instructional and demonstration room. This space is used for interactive instruction and formal presentations.

View of a Neighborhood Commons (Figure 9)

The centrally located two-story commons is the informal heart of the neighborhood. The function of dining, cafe style, occurs here. Although large enough to seat four hundred, that would be the exception. Lunch or snacks are available throughout the day and, at most, only one hundred students eat at once. The space also is used for informal socialization. A comprehensive high school educates on many levels including social and interpersonal skills. This is also the space were large groups (up to four hundred) can gather for demonstrations or pep rallies. Equally significant in this image is the entry court. With the extensive involvement of students in the greater community there will be more traffic in and out of the school. Instead of funneling all students through one or two main entrances, a separate entrance to their neighborhood is provided. It is designed to be welcoming and sheltering. In good weather it can be used for school activities.

Plan Diagrams for a 1,600-Student Community (Figure 10)

There are many possible ways to assemble four neighborhoods, a central forum, and an activity block. Site, climate, and community culture will influence the outcome. Four different arrangements are shown. This archetype is not so much a final solution as it is *a kit of parts.* Alternatives also include a different-size student body or a rural or suburban setting. As the number of neighborhoods change, so does the size of the central forum and the activity block. Nearby facilities also could impact the final design. A YWCA across the street could reduce or eliminate the need for physical education spaces. Important features in any development include the forum as the central space to the community, the entrance to this center space and, if there is one, to the competition gymnasium, the direct connection of the neighborhood commons, and the development of outdoor environmental labs.

View of a 1,600-Student Community (Figure 11)

The view of the 1600 student community diagram is developed into a three-dimensional view. The forum is central both in circulation and spatial dominance. It also has the option of opening to an outdoor amphitheater. The neighborhood commons open on to the forum. The gym has a separate entrance and can serve the greater community, while the rest of the building is secure. The court formed by the L-shaped building gives identity and comfort to the entrance. Two environmental labs are included.

With Figure 11 and the previous drawings, two significant features become evident. First, with the exception of the activity block, there are no corridors or hallways in this design. Students, faculty, or parents can enter through the main doors, go past the forum (and experience the activities there), move into the neighborhood commons, walk to the resource/production space, and arrive at the personal workstation group without going through a single corridor. Second, virtually all spaces are lit by natural daylight. This includes the forum, the gym, the commons, the resource/production space, and the personal workstation groups.

View of an Urban Comprehensive High School (Figure 4)

Schools do not exist in isolation. They relate to the surrounding environment functionally, culturally, and visually. The comprehensive high school incorporates the greater community into its educational process. The intention of this drawing is to reinforce that unity. The park, the homeless shelter, the low income housing, the public library, the clinic, the retail business, the professional offices, the elder care facilities, and others all have a give-and- take exchange with the school. Although the setting is an urban one, a suburban setting would be similar. A rural setting would not have as many adjoining facilities but would make greater use of student enterprise endeavors.

Break-The-Mold Concepts

This New Designs for the Comprehensive High School has evolved out of the educational and design concepts identified elsewhere in the report. As such, it may provide a contrast to the more-common approach to high school design—an approach that evolves from a review of recent projects in publications or in the district across town. Although there is something to learn from others, in this era of rapid change the process of reusing the *tried and true* is not valid. Of the several *break-the-mold* concepts in the design, the design-down process is the most significant. In the spirit of developing a prototype that will provide a basis for others in creating a new high school, the design-down process is the tool to begin with. Other break-the-mold features of this design include

- The basic building block is the personal workstation group, not the classroom.

- High school students will be grouped into approximately one hundred pupils; gathering them around a resource/production space to facilitate project-focused tasks.

- Neighborhoods that are virtually stand-alone schools will be created. Along with the multiple-use commons, they give students a meaningful environment with a special identity.

- The flexible studio frees the school organization from the limitations of the physical environment. and also allows for the complete integration of vocational and academic subject matter.

- Support staff are located in as friendly and accessible manner as possible, not behind intimidating facades with the large letters spelling ADMINISTRATION.

- Learning technology permits information to be everywhere. Instructional material centers and computer rooms no longer exist nor do the limits of scheduling access to those areas.

- Many places in the design provide for demonstration and display, now an important part of assessment. However, the most powerful place for this, the auditorium, has been freed from its bonds and is now the central forum, open for all to experience every day.

- The school is a part of the-web of the greater community. This design connects students to their surroundings, as well as provides space for the community in the school.

Some of these ideas have been implemented in isolated places around the country and abroad. Bringing them together with other newer ideas into a cohesive whole is a sign of hope.

References

Crumpacker, S. S. (1992). *The experience of school as place.* Unpublished doctoral dissertation, Curry School of Education, University of Virginia, Richmond.

Prairie School. (1992, May). *School design and school reform: Architects and educators seek keys to creating better learning environments.* News release from The Second Education. (Available from The Prairie School, 4050 Lighthouse Drive, Racine, WI 53402).

Weinstock, R. (1973). *The greening of the high school.* New York, NY: Educational Facilities Laboratories.

Figure J.1
Diagram of a 100-Student Family

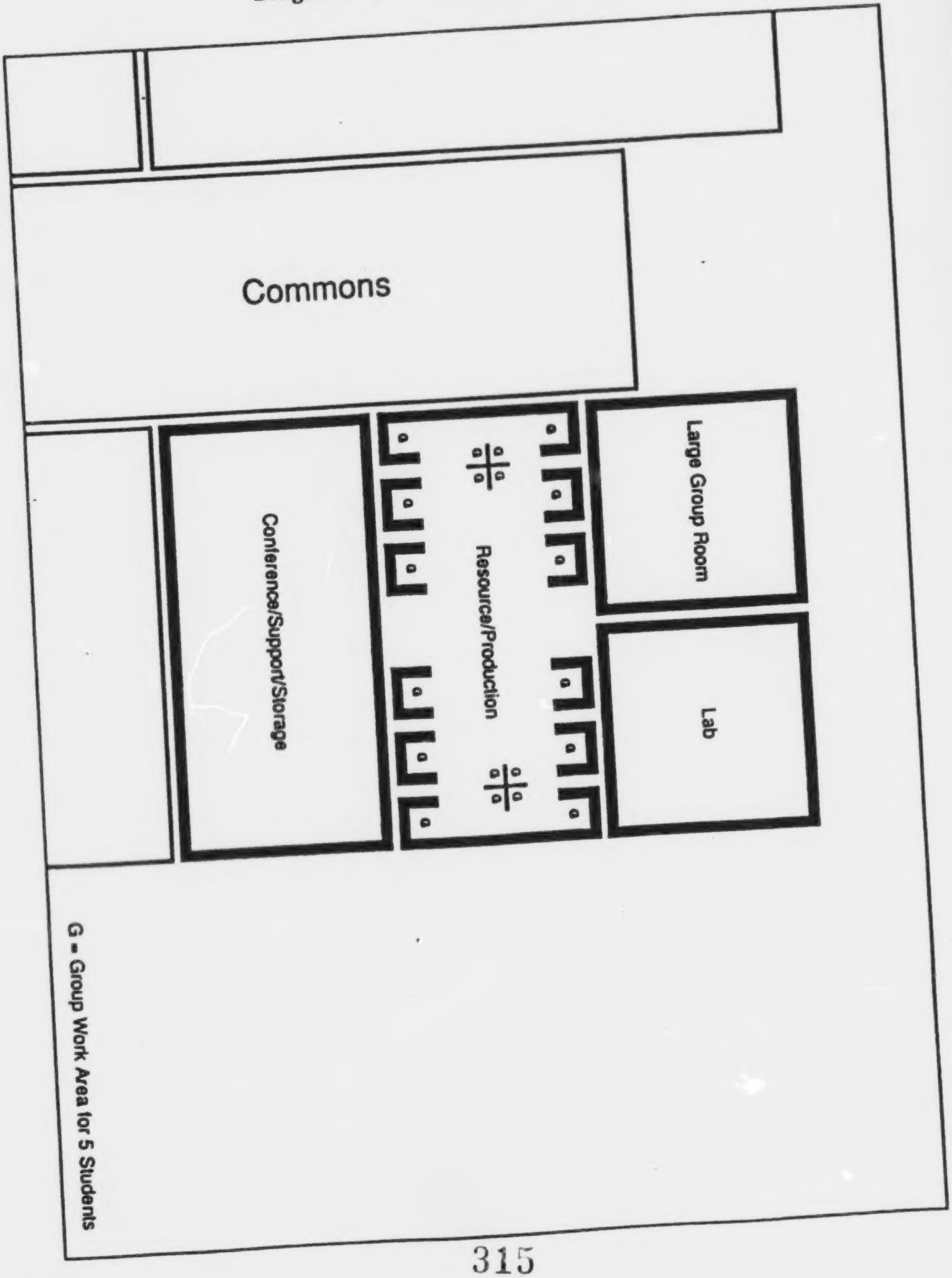
Commons
Large Group Room
Lab
Resource/Production
Conference/Support/Storage
G = Group Work Area for 5 Students

Figure J.2

Diagram of a 400-Student Neighborhood

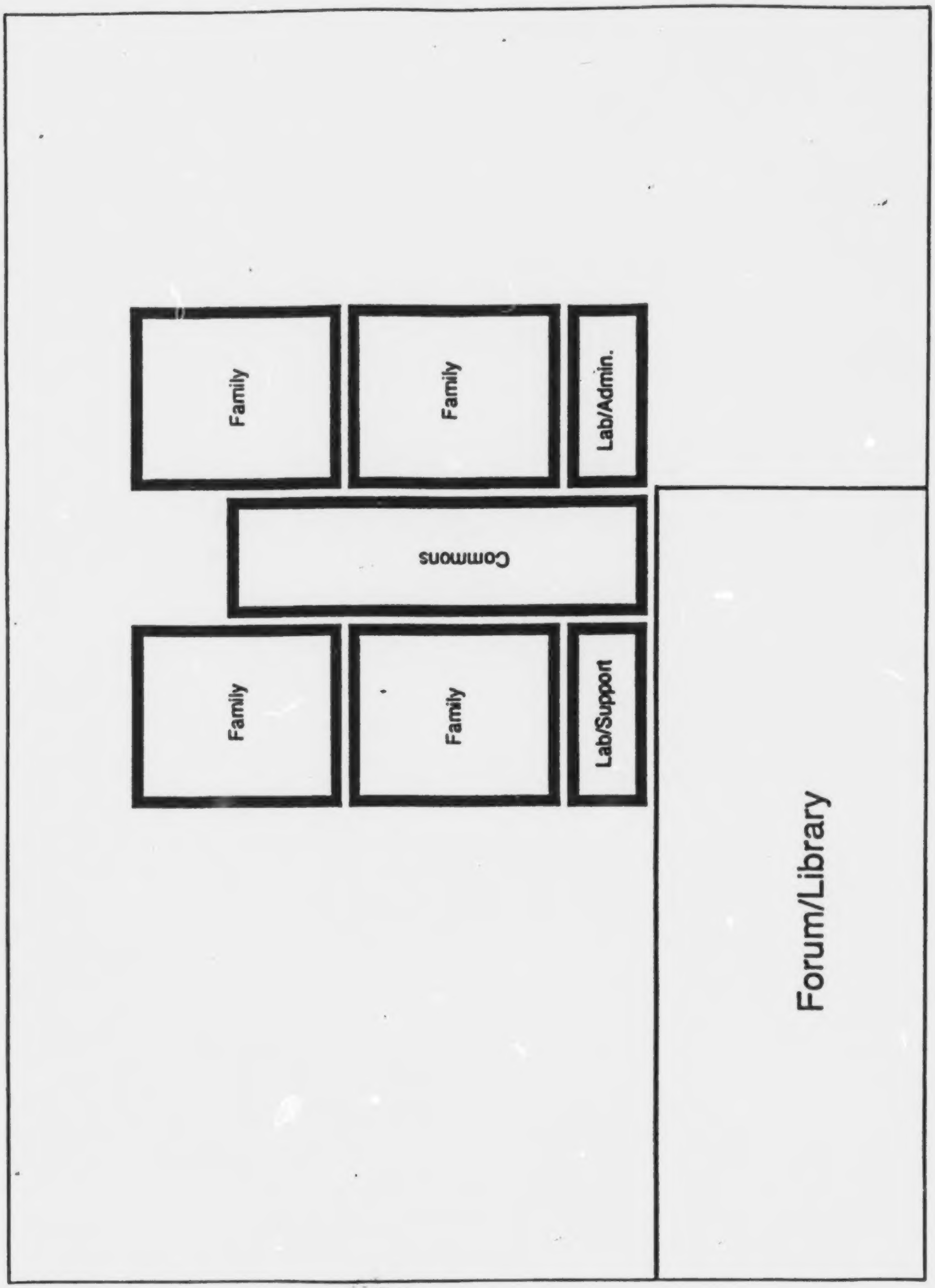
Family
Family
Lab/Admin.
Commons
Family
Family
Lab/Support
Forum/Library

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Figure J.3
Diagram of the 1,600-Student Community

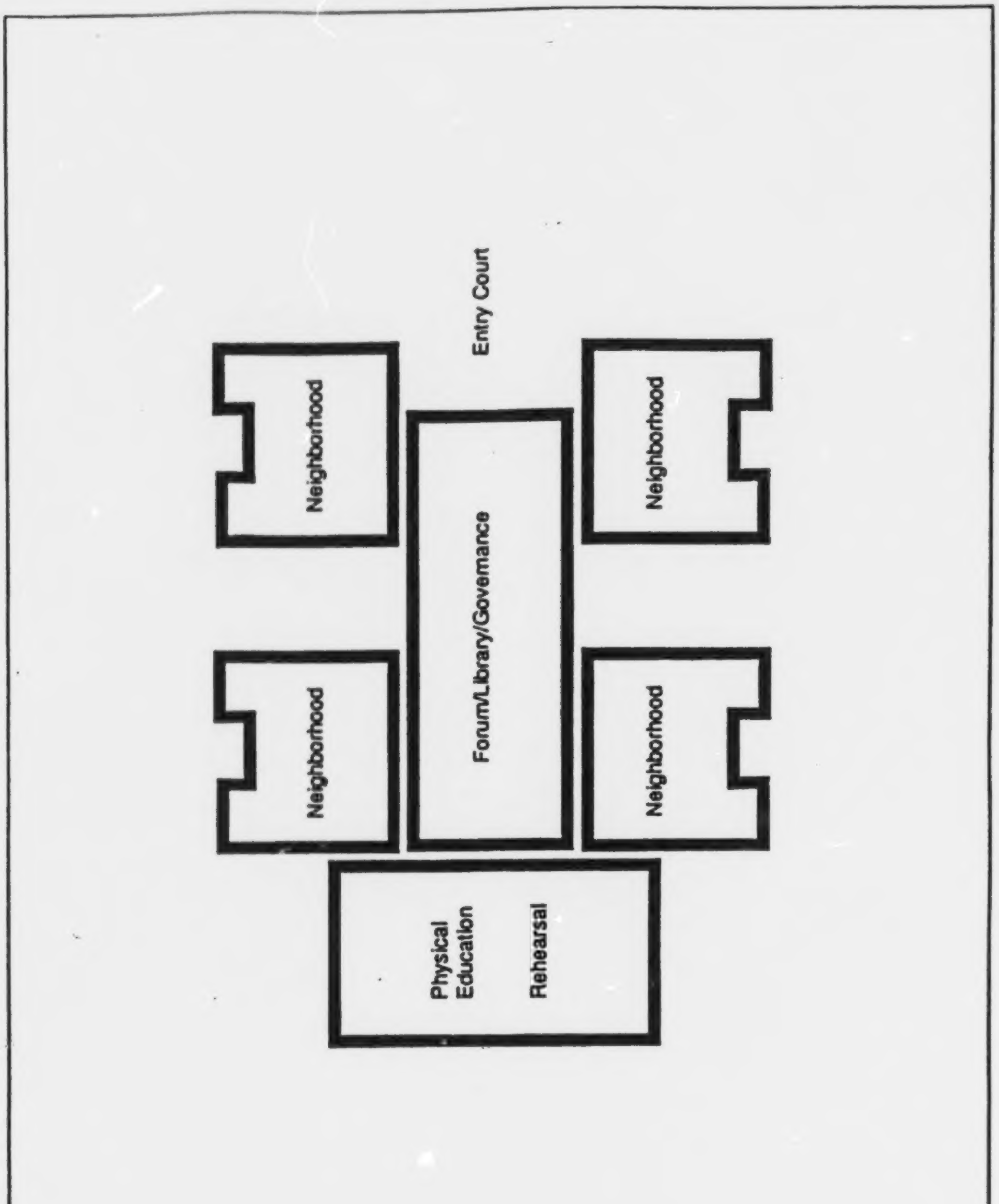
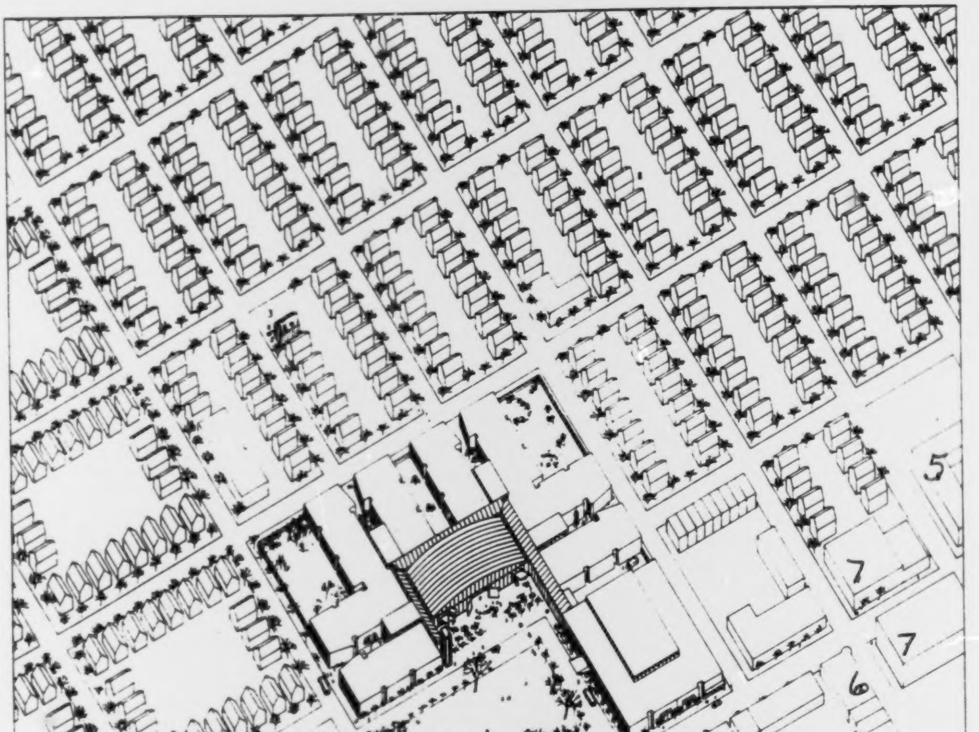

Entry Court
Neighborhood
Neighborhood
Forum/Library/Governance
Neighborhood
Neighborhood
Physical Education
Rehearsal

Figure J.4
View of an Urban Comprehensive High School



1 City Park
2 Homeless Shelter
3 New Low Income Houses
4 Public Library
5 Clinic
6 Retail Businesses
7 Professional Offices
8 Elder Care

Figure J.5
Personal Workstations for Groups of Five Students

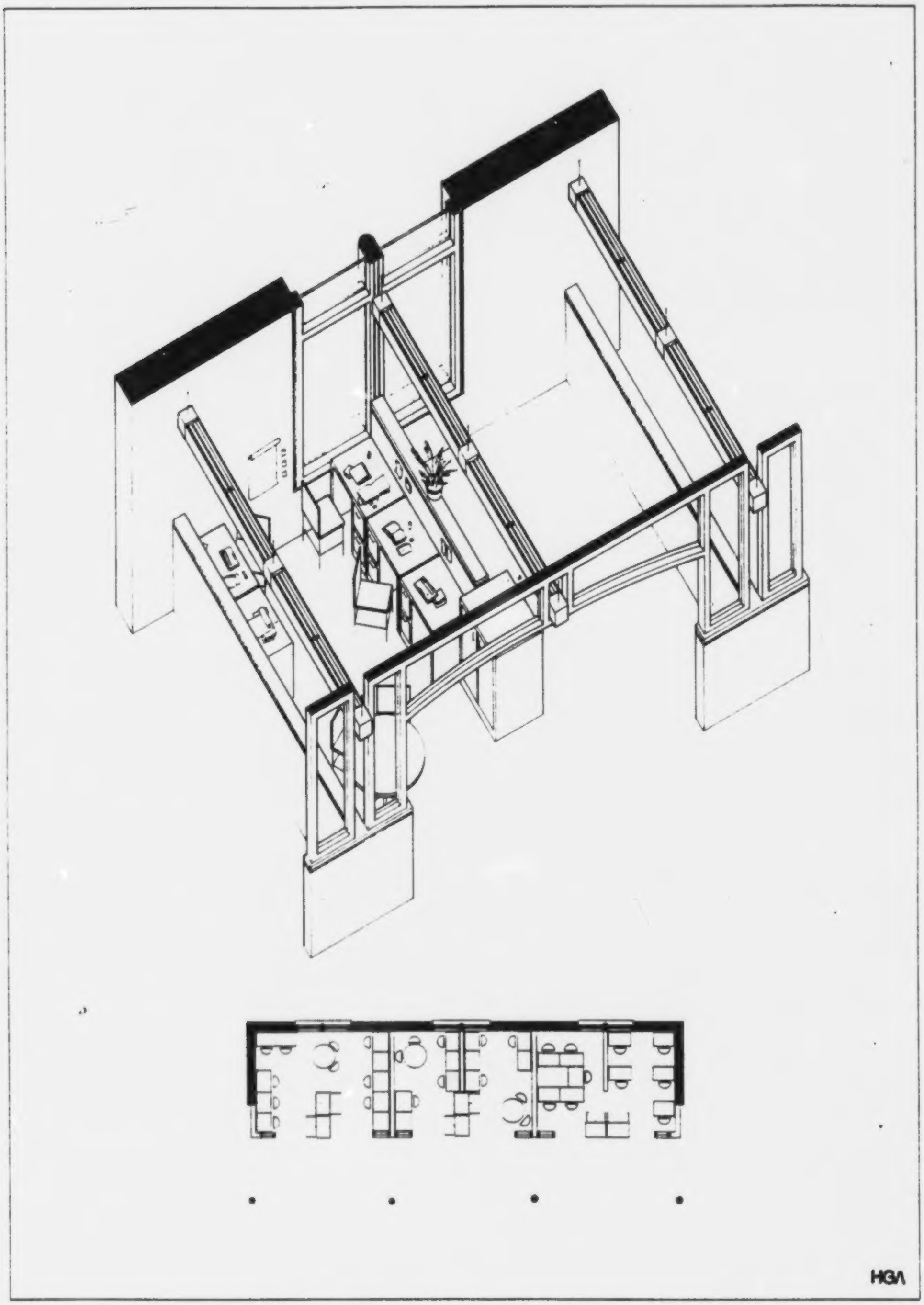
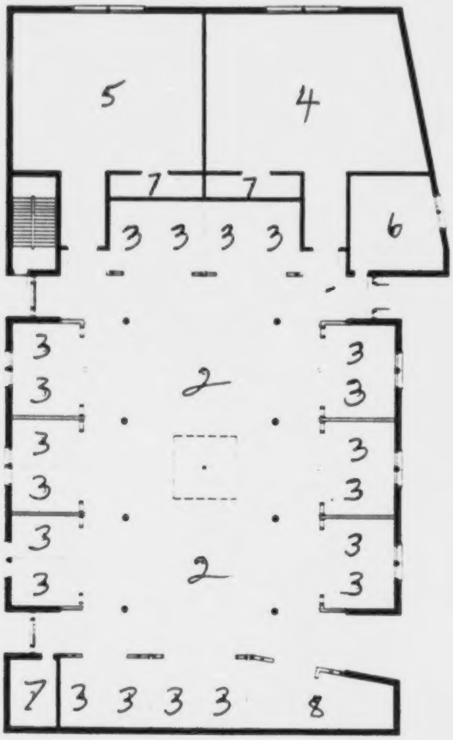


Figure J.6
Plan of a 100-Student Family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1	Commons
2	Production/Resource
3	Student Group Room (5)
4	Large Group (100)
5	Lab
6	Medium Group (15)
7	Storage
8	Planning/Office

Figure J.7
View of a 100-Student Family

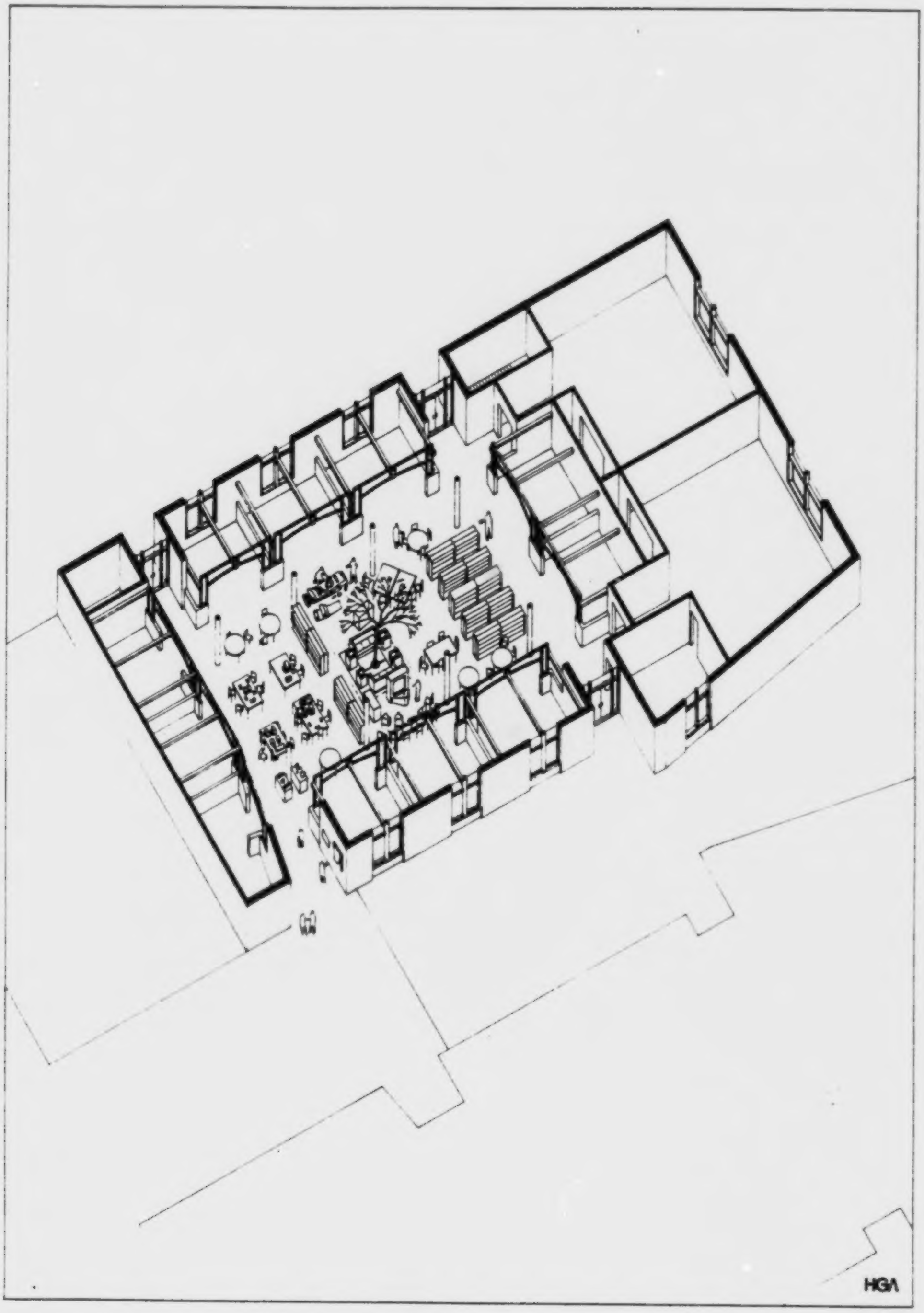
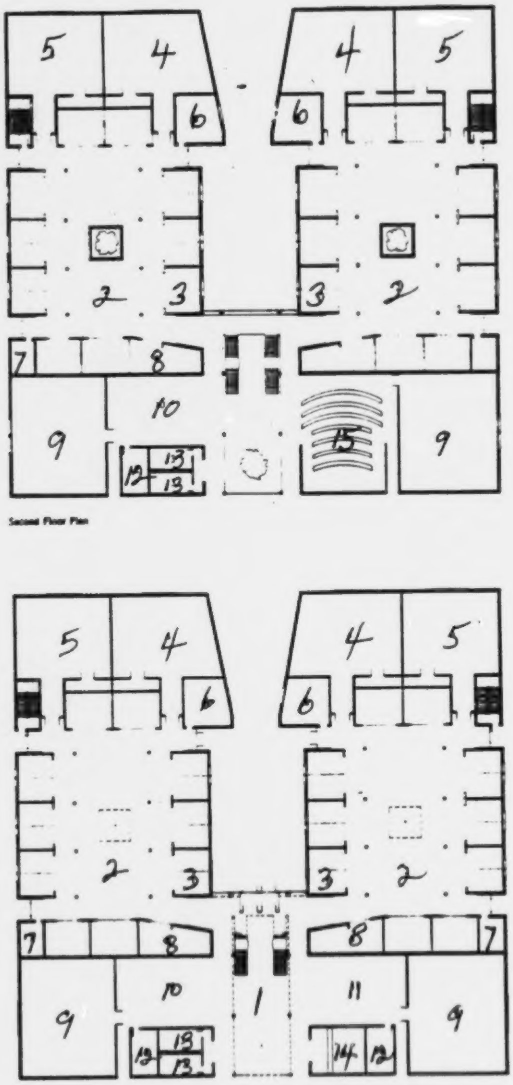


Figure J.8
Plans of a 400-Student Neighborhood



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Second Floor Plan
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First Floor Plan

1	Commons
2	Production/Resource
3	Student Group Room
4	Large Group
5	Lab
6	Medium Group
7	Storage
8	Planning/Office
9	Studio
10	Learning Services
11	Coordinator
12	Conference
13	Toilet
14	Food Service
15	Dialogue Room

HGA

Figure J.9
View of a Neighborhood Commons

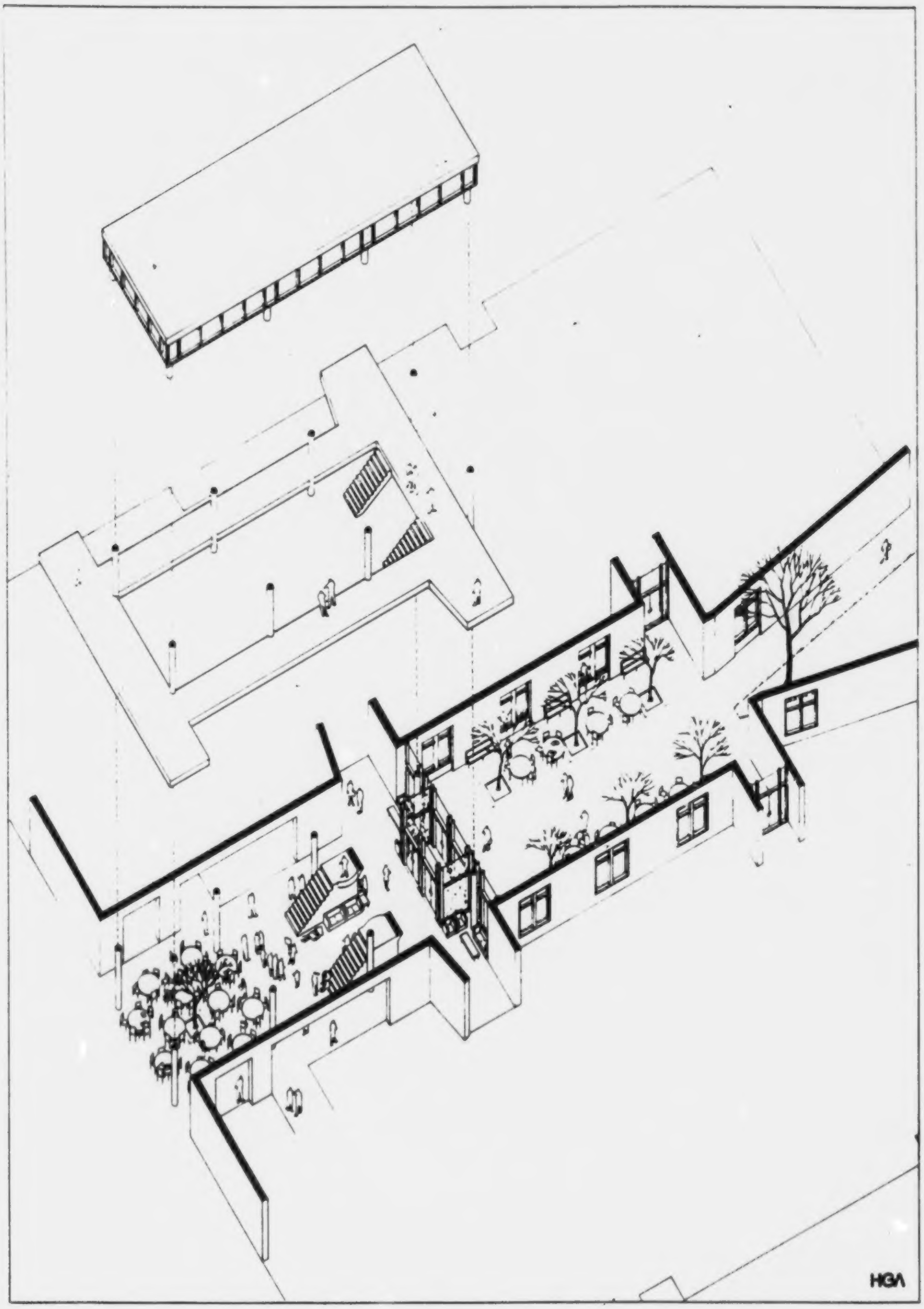
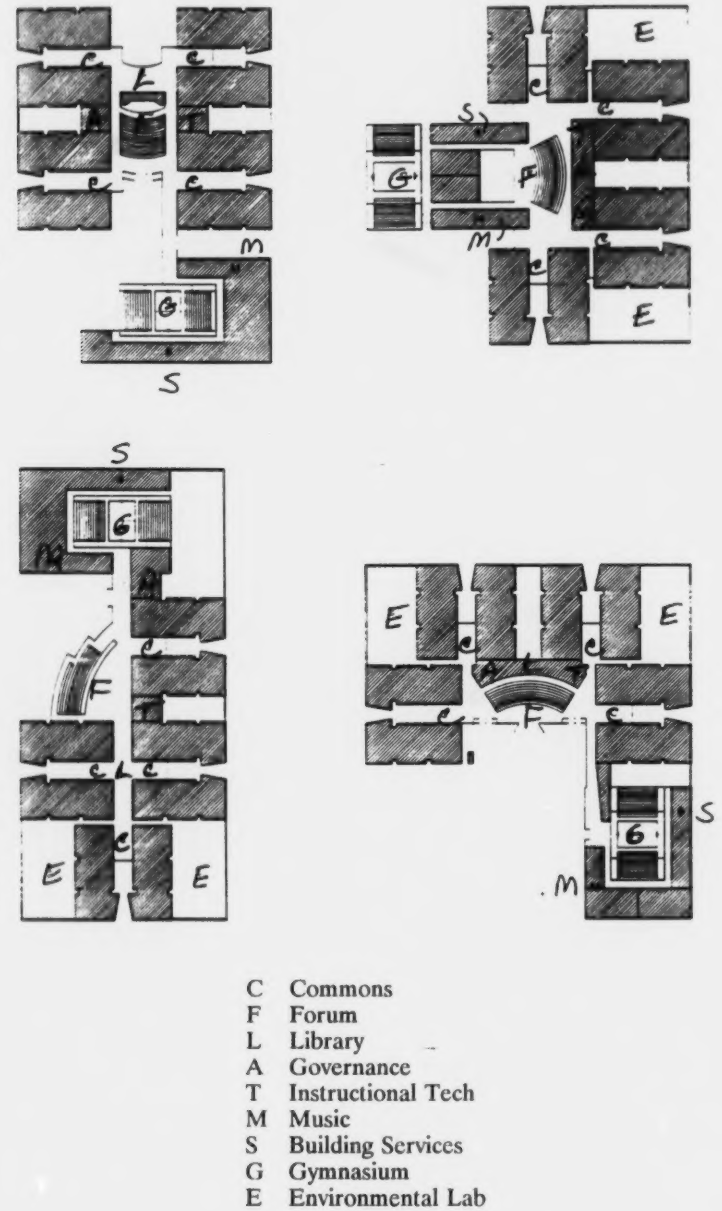


Figure J.10
Plan Diagrams for a 1,600-Student Community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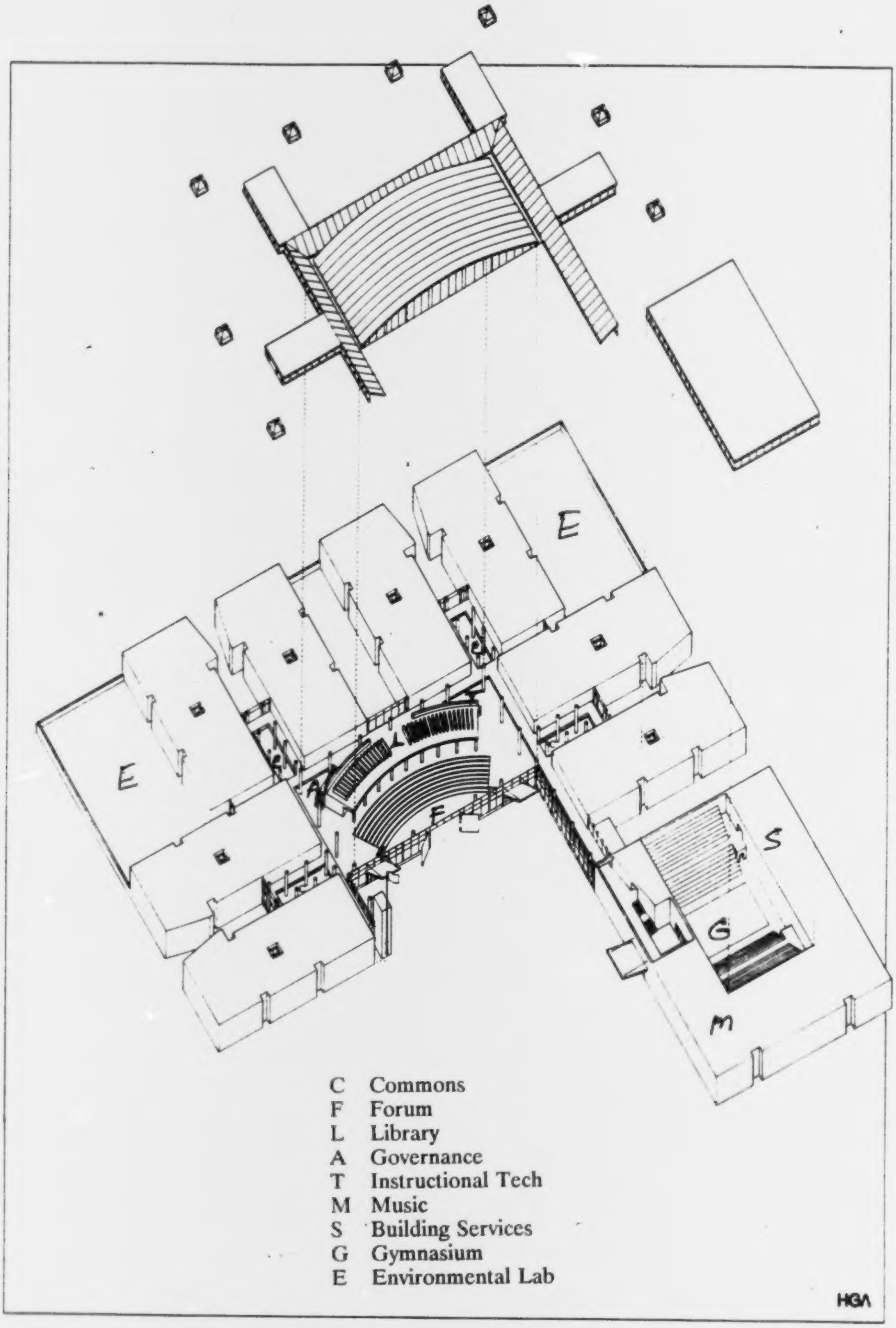
C	Commons
F	Forum
L	Library
A	Governance
T	Instructional Tech
M	Music
S	Building Services
G	Gymnasium
E	Environmental Lab

Figure J.11
View of a 1,600-Student Community



C	Commons
F	Forum
L	Library
A	Governance
T	Instructional Tech
M	Music
S	Building Services
G	Gymnasium
E	Environmental Lab

APPENDIX K

Learning Costs: Operating Cost Analysis for New Designs for the Comprehensive High School

LEARNING COSTS: OPERATING COST ANALYSIS FOR NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

by

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National Center for Research in Vocational Education
University of California-Berkeley
University of Minnesota Site

LEARNING COSTS: OPERATING COST ANALYSIS FOR NEW DESIGNS FOR THE COMPREHENSIVE HIGH SCHOOL

Introduction

This working paper examines the cost factors involved with the New Designs for the Comprehensive High school by comparing the anticipated operating costs with the traditional operating costs of a comprehensive high school in the United States. The average costs to operate a traditional comprehensive high school are used as a base for comparison because they represent the level of investment our society makes in secondary education today. Comparisons with the current level of expenditures are intended to generate discussions around tradeoffs, anticipated return-on-investments, and affordability. Conversely, use of the traditional comprehensive high school as a point of reference is not intended to imply that the current expenditure level is either adequate or excessive. Rather, the traditional high school represents a model that is familiar to most people concerned about secondary education and it represents a point of departure to consider alternatives.

The transition from a traditional comprehensive high school structure and approach to that envisioned in the New Designs for the Comprehensive High School will involve a variety of costs. These costs can be documented or estimated; however, they are not the focus of this working paper. Rather, this paper examines primarily the ongoing operational costs anticipated after the organizational transition is complete and the new designs are in place.

The discussions and analyses relative to operational costs are based on the design concepts that were developed in the series of research and synthesis papers for the New Designs for the Comprehensive High School research project. However, as the New Designs are implemented in a variety of communities and environments, the associated costs will vary. For example, transportation costs might be significantly higher in communities without access to public transportation or where the distances to be traveled to share resources and participate in partnering activities are great. Conversely, those communities where companies specializing in needed technology are located might anticipate greater partnership opportunities and lower costs than in other communities without similar resources.

No attempt has been made to estimate or account for operating cost variances resulting from local circumstances. Local committees and work groups studying the New Designs are in the best position to recognize and take into account these factors. The attention of this paper remains on the operating costs most likely to be associated with the New Designs, absent the impact of local circumstances and conditions.

The perspective from which the operating cost analyses are offered in this paper is the high school. No attempt is made to assess cost impacts on the school district or the larger community resulting from implementation of the New Designs for the Comprehensive High School. Some elements of the New Designs—including partnerships that share technology, experiential learning programs, and others—might result in lowered operating costs for the high school while potentially increasing costs elsewhere in the school district and community. These *cost shifts*, to the extent they exist, are assumed, but not analyzed and discussed in detail here. Nevertheless, in an environment where resources are shared and the search is constant for those who can perform best each necessary educational task or service, the total cost to the larger community—schools, businesses, government, and individuals—is likely to be far less than if each segment of the community was working in isolation.

The Path We Followed

The development of this paper presented two primary challenges. The first was to establish the component operational costs associated with the traditional comprehensive high school, including a model for use in comparing those costs with the New Designs for the Comprehensive High School. The second challenge was to analyze the costs associated with the operation of the New Designs and compare them to the costs of operating the traditional high school.

The search for operational costs associated with the traditional high school began with a review of an earlier study on exemplary career-oriented schools (Mitchell, Russell, & Benson, 1989). However, that study was found to be unsuitable because it did not include operating costs for the comprehensive high school and the costing method (Resource Cost Model) required a more detailed analysis of the New Designs than the information available would support.

The search continued through contacts with and referrals from Dr. Charles Benson at the University of California-Berkeley, including conversations and contacts at the OERI Center for Educational Finance at the University of Southern California and a variety of offices at the California Department of Education. While everyone agreed that information on the costs to operate a traditional high school should be collected and made available, no one was aware of such a databank of cost information.

Another thrust of this effort was to contact the Minnesota Department of Education (MDE). While the MDE did not possess data on the cost of operating a senior high school, they did provide valuable information on the ratio of expenditures for elementary versus secondary students. Their spending ratio data was used to calculate the cost of a high school education from student costs acquired from the Educational Research Service (ERS) (1991) of Arlington, Virginia. Contact with the ERS proved the most fruitful. However, their data was on a per student basis for all district expenditures. As with other resources, the cost of educating students at a particular level of instruction were not segregated from district-wide expenditures. Nonetheless, it was the ERS data that ultimately gave life to the section on operational costs for the traditional high school.

Considerable frustration remains about the absence of dependable national data in this area for use in comparisons with the New Designs. The cost associated with the operation of the traditional comprehensive high school in the United States appears to be a promising area for further research.

The second challenge, analyzing and comparing costs associated with the New Designs, appeared initially to be straight forward. However, further study uncovered several difficulties as various aspects of the New Designs were found to overlap and interrelate. In addition, the variabilities likely to emerge as the New Designs are implemented in specific communities with unique locations and environments argued against detailed, narrow conclusions.

A decision was reached to consider each of the areas of focus—educational technology, partnerships, and relational staffing—separately and conclude by integrating the three perspectives to show interplay and synergy. This decision proved very helpful in examining and explaining the cost impacts and in comparing the New Design costs to those associated with the traditional high school.

The project ultimately came together reasonably well in spite of the difficulty in locating dependable national data on the cost of operating the traditional comprehensive high school and the need to remain focused on the operational costs associated with the New Designs while recognizing probable variations in operating costs that will emerge as the New Designs are implemented locally.

This paper is divided into five major sections. The first part will present and examine cost categories and levels associated with the traditional comprehensive high school in the United States. The second section will consider the cost impact of an educational technology focus in the New Design, including equipment, maintenance and custodial, and staffing costs.

The third section will identify cost increases and decreases associated with the New Design's focus on partnerships. Capital expenditures, staffing, and transportation costs will be noted and discussed. The fourth section will present an analysis of the New Design's focus on relational staffing. The cost options and impacts of a relational staffing approach will be identified and examined. The final section of this paper will analyze the impact of the integration of the three areas of technology, partnerships, and relational staffing on financial resources. The impact of these three aspects of New Designs for the Comprehensive High School will be highlighted, discussed, and assessed.

High School Cost Analysis

Determining the cost of operating a *typical* high school has proven to be a difficult task. While a wealth of data exists relating to educational costs on a district basis, a breakdown by level of instruction is not available. The Education Research Service (ERS) indicated that they have suggested repeatedly that the United States Department of Education conduct research on the costs of providing an educational program for a particular school building or specified grades. A major obstacle in assembling such data relates to the lack of comparability in how districts account for various costs and how those costs are assigned within the organization. This lack of data and its importance was noted by Allen Odden who reported that "expanding information in this arena is another research imperative for the 1990s" (Odden & Picus, p. 277).

Analysis is based on the average cost of educating each student throughout an entire school district. This data does not distinguish between elementary or secondary students. Therefore, the cost of a high school education is inferred from this data based on spending ratios. It is common for states to fund education on a per student basis by weighting various students differently based on the anticipated cost of education at various levels. These education formulas provide funding ratios ranging from 1.15 to 1.70 for secondary versus elementary education (Odden & Picus, p. 235-237).

Funding ratios are intended to recognize and approximate the difference in the cost of educating a secondary student versus an elementary student. In 1991 the Minnesota Department of Education attempted to reconstruct the spending ratios using expenses reported by Districts for the 1989-90 fiscal year (7/1/89 - 6/30/90). These expenses were reported on a modified accrual basis of accounting. The analysis indicated spending ratios ranging from 1.53 to 1.31 depending on the district's K-12 enrollment. Broken down by the district size, the ratios are shown in Table K.1 (Minnesota Department of Education).

Table K.1

Spending Ratios (Elementary vs. Secondary) by District Size

District Enrollment	Spending Ratio (Elementary vs. Secondary)
0-300 Students	1.51
300-600 Students	1.50
600-900 Students	1.42
900-1200 Students	1.54
1200 & More Students	1.31
Average	1.38

A ratio of 1.30 appears to be a reasonable ratio to use for determining the existing standard of expenditure for elementary versus secondary education. It is consistent with nationwide funding ratios and, in Minnesota, reflects a spending ratio for the largest schools. Furthermore, for the purpose of this study, that is, the cost of operating a comprehensive high school, it seems appropriate to eliminate school districts with fewer than 1,200 students. While a spending ratio of 1.3 can be substantiated on the basis of national spending patterns and funding formulas, ratios that favor secondary students are often refuted from an educational productivity standpoint. Nonetheless, the use of ratios as noted appears justifiable when evaluating existing data.

The analysis that follows is based on expenditure profiles developed by the Educational Research Service. The categories and descriptions are taken verbatim from *Local Budget Profiles 1990-91* published by ERS (ERS, p. 1). The profile is a compilation of budget data submitted by member districts for expenditures on a district-wide basis. These categories, defined below, are used in each of the tables to compare anticipated costs with that of a traditional high school. The ERS school budget profile provides "a consistent and reliable means for comparing local school budgets throughout the nation," (Robinson & Protheroe, p. 18). The descriptions for the school budget profile categories are shown in the ERS data presented here.

Names and Descriptions of [illegible] Cost Categories Used by the Educational [illegible] Service (ERS)

ERS Budget Analysis Categories	Description Provided by ERS
Total Instructional Services	**Included:** Total of expenditures for Classroom Instruction, Books and Materials, Auxiliary Instructional Services, Improvement and Development of Instruction, Special Education, and Other Instructional Services (e.g., services contracted to outside agencies, such as regional service agencies).
Classroom Instruction	**Included:** K-12 teachers, paraprofessionals, and clerical personnel working with teachers in the classroom.
Special Education	**Included:** Teachers, paraprofessionals, and clerical personnel providing services to handicapped students; also includes services contracted to outside agencies or private schools to which district sends special education students.
Books and Materials	**Included:** Textbooks, library books, audiovisuals, and instructional materials.
Auxiliary Instructional Services	**Included:** Counselors and librarians and their support staffs; testing services.
Improvement and Development of Instruction	**Included:** Curriculum development; instructional supervision; inservice and professional development of staff services.
School Site Leadership	**Included:** Offices of principals and assistant principals.
Total Student Services	**Included:** Total of expenditures for Health and Attendance, Transportation, Food Services (net cost), Student Activities (net cost), and Other Student Services.
Health and Attendance	**Included:** Physical and mental health staff related paraprofessionals, and clerical staff and materials.

Transportation	**Included**: Staff, maintenance and operation of equipment; fuel, and contracts for transporting public school pupils even if a separate transportation fund is maintained. **Excluded**: Expenditures related to the transporting of non-public school pupils.
Food Service	**Included**: Net cost to district of operating food service program. **Excluded**: Expenditures offset by income from cash sales and state and/or federal subsidies.
Student Activities	**Included**: Net cost to district. **Excluded**: Expenditures offset gate receipts, activity fees.
Board of Education Services	**Included**: Board member salaries and expenses; election services; legal services; census; tax assessment/collection services; and similar board services.
Executive Administration	**Included**: Offices of the superintendent, deputy, assistant, and area superintendents; include also employee relations and negotiation services; state and federal relations services; and related services not listed elsewhere. **Excluded**: Services (listed elsewhere) for planning, research, and evaluation; maintenance and operations; statistics; data processing; business; and school site leadership.
Central and Business Services	**Included**: Fiscal services (payroll, budgeting, accounting, internal auditing); facilities acquisition and construction services; central office support services (staff personnel, public information, planning, research, evaluation, statistics, data processing); and similar services not included elsewhere.
Maintenance and Operations	**Included**: Staff, equipment, and supplies for the care, upkeep, and operation of buildings, grounds, security, and other services. **Excluded**: Expenditures such as retirement contributions and fringe benefits that are prorated in items above; also Excluded are expenditures for community services, recreation services, and junior colleges.
Environmental Conditioning	**Included**: Fuel for heating and cooling plus all utilities except telephone.
Other Current Expenditures	**Included**: All other current expenditures not reported elsewhere (e.g., telephone charges if these are all budgeted to one district-wide account), fire insurance, professional liability insurance, short-term interest). **Excluded**: Expenditures such as retirement contributions and fringe benefits that are prorated in items above; also Excluded are expenditures for community services, recreation services, and junior colleges.

Capital Outlay	**Included**: Expenditures from any special capital outlay accounts for new and replacement buildings, vehicles, and other major equipment items. **Excluded**: Expenditures for capital outlay purchases already reported above.
Debt Retirement	**Included**: Payment on principal; payments to school-housing authorities.
Interest Paid on Debt	**Included**: Interest paid on long-term debts only.
Total Budgeted	**Included**: Total of expenditures for total current expenditures budget plus non-current expenditures items. Portions of percentage in excess of 100.00% represents expenditures for capital outlay, debt retirement, and interest paid on debt.

Note: For all budget categories Included under Total Current Expenditures, respondents were asked to include all salaries, prorated employer payments for retirement, social security (FICA), fringe benefits as well as, materials contracted services to other agencies, and other current expenditures related to each of the functions. Expenditures for all current expenditure funds (e.g., operating, federal projects, transportation) were requested.

Determining the Typical Cost Basis

The ERS data has been manipulated by the authors to derive an estimated cost per high school pupil using the 1.30 secondary/elementary ratio described earlier. To achieve this ratio, an algebraic formula was developed for the purpose of converting the ERS pupil data to a cost per high school pupil. For this purpose, an even distribution of students across thirteen grades (kindergarten through twelfth grade) was assumed. This yielded a factor of 1.18, which was applied to the ERS student cost data to calculate the relative cost of each high school student. This step was necessary to convert the average pupil cost data provided by ERS to an average cost per high school pupil at the 1.3 ratio.

Table K.2
Expenditures Per Pupil, 1990-91

ERS Budget Analysis[a] Categories	Per High School Per Pupil[a] Expenditure	Pupil Expenditure @1.3 Ratio[b]
Total Current Expenditures	$ 5017	$ 5920
Total Instructional Services	3392	4002
• Classroom Instruction	2491	2939
• Special Education	417	492
• Books and Materials	140	165
• Auxiliary Instructional Services	207	244
• Improvement and Development of Instruction	70	83
School Site Leadership	271	320
Total Student Services	392	463
• Health and Attendance	80	94
• Transportation	234	276
• Food Service	15	18
• Student Activities	51	60
Board of Education Services	28	33
Executive Administration	94	111
Central and Business Services	121	143
Maintenance and Operations	417	492
Environmental Conditioning	135	159
Other Current Expenditures	165	195
Capital Outlay	241	284
Debt Retiremen	149	176
Interest Paid on Debt	102	120
Total Budgeted Expenditures	5511	6503

NOTE. The per pupil income and expenditure data shown in the table were computed by calculating the means of dollar figures for each of the reporting districts, and the percents shown were computed by calculating the means of the percent figures. Therefore, the percents may differ from those calculated from per pupil income and expenditure figures shown in this table. Also, each total in this table was calculated directly from data supplied by the reporting districts, not by adding the averages listed for the applicable component categories; therefore, the averages for the components do not necessarily add up to match the totals listed.

[a] Source: Educational Research Service, 1991 *Local School Budget Profiles*, Arlington, VA.

[b] ERS Data manipulated by author.

The typical cost basis shown in Table K.2 will be repeated in Tables K.3, K.4, K.5, K.6, and K.7. The typical costs developed above were used in the development of four different scenarios that draw from and expand the New Design concepts. The first three scenarios analyze the operating cost impact of New Designs school with (a) an educational technology focus, (b) a partnership focus, and (c) a relational staffing focus. The fourth scenario analyzes the cost impact of combining the first three into an integrated focus.

Educational Technology Focus

An important aspect for the New Designs for the Comprehensive High School is the utilization of educational technology to create learning environments that are authentic, closely resembling the settings in which students will work as adults. In this context, educational technology represents the tools to access needed information and knowledge and to do productive work.

The term, *educational technology*, as used in this paper, is consistent with the definition offered by Damyanovich, Copa, and Pease (1992) in the earlier research and synthesis paper entitled *Learning Technology: Enhancing Learning in New Designs for the Comprehensive High School*:. Educational technology refers to the new and emerging information technologies that connect people and institutions and provide easy access to multiple sources and forms of information at disparate locations making learning accessible, flexible and portable (i.e., computers, calculators, electronic networks, telecommunications, databases, graphics and publishing software, video discs, CD-Rom, interactive and satellite television).

Equipment Costs

Equipment to support a technology focus in the New Designs will require far more than currently is invested in the traditional high school. Beyond initial costs to purchase technology, additional financial resources will be required to replace worn-out and outdated equipment, and to incorporate new technologies as they are available.

Several options exist for dealing with the intensive technology investment beyond the direct allocation of financial resources. Partnerships might be explored with other educational and training institutions, including universities, colleges, technical institutions, and training centers where the identified technology may exist, but is not utilized fully. A school, for instance, may utilize another organizations computer capacity during non-peak usage periods. Another potential option is to secure funding from private sources such as local businesses and foundations. Further, partnerships with businesses might be developed in which businesses provide the necessary resources to purchase technology in exchange for access to the technology and staff training during non-student use times. Finally, students might be allowed access to certain technology located in local businesses at times when the technology is not needed by employees. This approach is particularly attractive in areas of technology that are highly specialized and where hardware and software are expensive. Best of all, both parties to these arrangements benefit from their involvement. Obviously, several of these alternatives drastically reduce the cost of access to new and appropriate technology to a point where the cost is within the range of reasonable affordability.

Software and Database Access

The usability and impact of technology is heavily dependent on the availability of appropriate software and access to a wide range of databases to assist in a student driven educational program. Costs related to the purchase and updating of software and access to multiple external databases will exceed current costs significantly. However, there will be some offsetting of current costs as dependence on printed materials such as textbooks is diminished. In addition, the ability to keep software and databases current offers a positive tradeoff to textbook replacement.

Some software and databases may be available through partnerships with other organizations and institutions such as technical schools and universities. However, it is anticipated that most of the increased costs will be borne by the resources of the high school or from partners willing to make necessary financial resources available.

Custodial and Maintenance Costs

The nature and complexity of today's technologies makes a program of preventive and routine maintenance of equipment a requirement. The costs to support these services will be higher than current levels. Incidentally, the level of equipment maintenance in most school districts today is below what is acceptable in other environments resulting from the reallocation of funds into other areas such as salaries, instructional supplies, and emergency repairs. Consequently, the increase in resources required to provide a reasonable preventive and routine equipment maintenance program will be even larger than would be the case if current supports were adequate.

Custodial costs might be expected to rise also as educational space is divided into smaller work and meeting areas and as more furniture and equipment are present. However, the increase is not expected to be more than moderate.

An alternative that might be considered in light of efforts to provide an *ownership curriculum* to students is that of expecting students to participate in the care and cleanliness of their own work space. This practice would reduce any increase in current custodial costs and if the practice was extended into common areas, the custodial costs even might be held at current levels.

Staffing

The implications of a heavy investment in technology on costs related to staffing are a challenge to determine because much depends on the type and level of sophistication of the technology. Obviously, support will be required initially and on an ongoing basis to develop and maintain the necessary knowledge and skills among staff members to facilitate maximum utilization. These training and support needs often are overlooked or underestimated when technology purchases are planned. Yet, such an oversight is likely to result in diminished returns from an investment in technology.

In addition, special skills and roles will be required of some staff to support and coordinate change through partnerships related to technology. Others will need additional skills to support the technology itself—making minor adjustments and repairs and troubleshooting minor problems. Finally, some staff members will have to be looking ahead to new developments in technology, assessing potential for application in the school, and exploring ways to making technology available and accessible (Damyanovich, Copa, & Pease, 1992). Not all the staff who fill these special roles related to technology will have to be full-time nor will all of them have to be licensed teaching staff. Some options are available for specially-trained paraprofessional and technical staff to perform these functions.

Supplies and Materials

A moderate increase in supplies and materials is anticipated to support additional technology, including computer disks, video and audio tapes, cameras, and film. However, as dependence upon traditional materials such as textbooks and workbooks is lessened, some material cost increases will be offset. Therefore, the added costs are projected to be moderate.

Table K.3
Expenditures Per High School Student—Traditional vs. Educational Technology Focus

ERS Budget Category	Traditional Focus Per High School Pupil Expenditure @ 1.3 Ratio	Technology Focus Anticipated Change
Total Current Expenditures	$ 5920	+
Total Instructional Services	4002	+
• Classroom Instruction	2939	+
• Special Education	492	0
• Books and Materials	165	0
• Auxiliary Instructional Services	244	+
• Improvement and Development of Instruction	83	++
School Site Leadership	320	0
Total Student Services	463	0
• Health and Attendance	94	0
• Transportation	276	0
• Food Service	18	0
• Student Activities	60	0
Board of Education Services	33	0
Executive Administration	111	0
Central and Business Services	143	0
Maintenance and Operations	492	+
Environmental Conditioning	159	+
Other Current Expenditures	195	+
Capital Outlay	284	++
Debt Retirement	176	0
Interest Paid on Debt	120	0

Note.
++ Substantial increase of more than +20%
+ Moderate increase of +5% to +20%
0 Little or no change anticipated +5% to -5%
- Moderate decrease of -5% to -20%
– Substantial decrease of more than -20%

Partnership Focus

A discussion of partnerships in the New Designs for the Comprehensive High School is presented in the earlier working paper entitled *Learning Partnerships: Lessons from Research Literature and Current Practice in Secondary Education*, by Karls, Pease, Copa, Beck, and Pearce (1992). This section offers perspectives on the cost impacts related to the integration of partnerships as envisioned in the New Designs.

The impact on costs resulting from a partnership focus will vary considerably as the nature, level, and goals of multiple partnerships emerge. However, the underlying partnership premises of shared resources, expertise, and perspectives are that they will lead to more efficient use of the human and financial capital available within the community and, in the larger context, will result in reduced costs. Nevertheless, some variation of impact is likely to occur across cost categories.

Facilities and Equipment

The capital cost areas of facilities and equipment are likely to be affected positively by significant, ongoing partnerships with businesses, the general community, and post-secondary institutions. A prime example is the use of businesses as cooperative working/learning stations. The business benefits by acquiring motivated students and training assistance from the school. The school benefits by providing a meaningful education without making the additional investment in facilities and equipment. And the student benefits by receiving a more meaningful and better leveraged education. Partnerships might take the form of co-location of services, shared access to specialized equipment, and joint use of facilities. If students are provided access to sophisticated technologies located in businesses, post secondary training institutions, or other nearby public or private secondary schools, the high school can avoid bearing the total cost to purchase and maintain equipment that may not be cost effective in terms of use levels and impact on the general student population. Businesses, conversely, might accommodate student access to technology if the school is willing to share costs for maintenance and upkeep of equipment. From the perspective of high school facilities, needed space also is freed to be used for other, often more flexible, purposes. In some cases, significant reductions in capital and maintenance costs might be realized through the sharing of facilities and equipment and attendant operational costs.

Staffing

Staff related costs are likely to be impacted in at least four major areas related to partnerships. First, additional training will be required to prepare and support staff to focus successfully in an environment that is heavily dependent on partnerships. Initial training costs will be highest, but moderate increases over traditional costs are expected to be ongoing.

Second, staffing costs will be reduced in areas where partners with special expertise are utilized to provide services such as student instruction, internships, and staff training. This impact will be most obvious when external partner expertise is utilized to avoid hiring permanent, full-time staff for highly specialized services.

Third, co-location of community services in the high school and partnerships with health and social service organizations might be expected to change and reduce some current responsibilities in pupil support service areas such as nursing, counseling, social work, and psychology. Increasingly, the role of school pupil support staff will be the identification of need and referral to appropriate services. This shift is likely to reduce moderately the number of staff required in pupil support roles.

Fourth, moderate increases in staffing costs will result from services needed to identify, orient, supervise, and manage volunteer and partnership human resources. The increase in cost is anticipated since these services do not exist in most traditional high schools today and where the services are present, they rarely are at the level envisioned in the New Designs for the Comprehensive High School. Conversely, these increases might be offset, partially or completely, by school level administrative role changes from traditional principals to community coordinators with more direct responsibility to support student learning.

Transportation

A commitment to share equipment, facilities, and services (e.g., training, mentorships, internships) will require student transportation to multiple locations outside the high school facility. This commitment to transportation exceeds the level and flexibility of transportation services found in most traditional high schools today, and will result in significant increases in transportation costs.

One strategy to manage this demand for resources is to purchase or lease several vans to transport small groups of students, utilizing properly licensed staff members or carefully screened and insured volunteers as drivers. Another similar strategy is to include in the partnership access to carpool vans during non-use hours where the business partner has such a program in place. Specific costs to implement these strategies will vary by location and circumstance, but in almost all cases, the cost will be lower than more traditional school transportation options.

Table K.4
Expenditures Per High School Student—Traditional vs. Partnership Focus

ERS Budget Category	Traditional Focus Per High School Pupil Expenditure @ 1.3 Ratio	Partnership Focus Anticipated Change
Total Current Expenditures	$ 5920	0
Total Instructional Services	4002	0
• Classroom Instruction	2939	0
• Special Education	492	0
• Books and Materials	165	0
• Auxiliary Instructional Services	244	-
• Improvement and Development of Instruction	83	+
School Site Leadership	320	+
Total Student Services	463	-
• Health and Attendance	94	-
• Transportation	276	+
• Food Service	18	0
• Student Activities	60	-
Board of Education Services	33	0
Executive Administration	111	0
Central and Business Services	143	0
Maintenance and Operations	492	0
Environmental Conditioning	159	0
Other Current Expenditures	195	0
Capital Outlay	284	0
Debt Retirement	176	0
Interest Paid on Debt	120	0

Note.
++ Substantial increase of more than +20%
+ Moderate increase of +5% to +20%
0 Little or no change anticipated +5% to -5%
- Moderate decrease of -5% to -20%
– Substantial decrease of more than -20%

One strategy to manage this demand for resources is to purchase or lease several vans to transport small groups of students, utilizing properly licensed staff members or carefully screened and insured volunteers as drivers. Another similar strategy is to include in the partnership access to carpool vans during non-use hours where the business partner has such a program in place. Specific costs to implement these strategies will vary by location and circumstance, but in almost all cases, the cost will be lower than more traditional school transportation options.

Table K.4
Expenditures Per High School Student—
Traditional vs. Partnership Focus

ERS Budget Category	Traditional Focus Per High School Pupil Expenditure @ 1.3 Ratio	Partnership Focus Anticipated Change
Total Current Expenditures	$ 5920	0
Total Instructional Services	4002	0
• Classroom Instruction	2939	0
• Special Education	492	0
• Books and Materials	165	0
• Auxiliary Instructional Services	244	-
• Improvement and Development of Instruction	83	+
School Site Leadership	320	+
Total Student Services	463	-
• Health and Attendance	94	-
• Transportation	276	+
• Food Service	18	0
• Student Activities	60	-
Board of Education Services	33	0
Executive Administration	111	0
Central and Business Services	143	0
Maintenance and Operations	492	0
Environmental Conditioning	159	0
Other Current Expenditures	195	0
Capital Outlay	284	0
Debt Retirement	176	0
Interest Paid on Debt	120	0

Note.
++ Substantial increase of more than +20%
+ Moderate increase of +5% to +20%
0 Little or no change anticipated +5% to -5%
- Moderate decrease of -5% to -20%
– Substantial decrease of more than -20%

Relational Staffing Focus

A way to think about a relational staffing model is to use the metaphor of a family. While parents might have primary responsibility for the care, guidance, and education of the children, aunts, uncles, grandparents, older cousins and others within the community often will play supporting roles in the upbringing of the children. The organization of the New Design for the Comprehensive High School is particularly adaptive to relational staffing or a *family* model because of the small unit structure within larger neighborhoods and communities of learners.

Older cousins teach a child how to ride a bicycle, a neighbor gives piano lessons and a person from across town coaches the soccer team. While the parent has direct responsibility for helping the child decide learning activities in which to participate and will coordinate schedules and even car pool to the activities, others in the family, neighborhood, and community play specialized contributing roles.

The same is true in a relational staffing approach. Typically, some staff members will assume greater direct responsibility for the learning activities of students and will coordinate the activities of other staff members whose contributions are necessary to support a full range of learning opportunities. Additionally, this approach lessens dependence on middle level administrative services such as provided by department heads and associate principals, resulting in reduced administrative costs.

Two primary goals support the concept of relational staffing: (a) achieving an optimal match between the resources and talents required of staff members and the responsibilities of the positions for which they are hired; and, (b) purchasing the maximum amount of human resources with the financial resources available. Achieving an optimal match between the human resources staff members offer and what is required of program positions allows greater flexibility in staffing patterns and in the services offered students.

Staffing Costs

If the level of adult support available to students in the traditional high school were held constant in the New Designs, staffing costs would be reduced moderately. However, if the resources available for staffing in the traditional high school were held constant, an increase in adult support could be supported using a relational staffing approach.

Staff Development and Training

Some increase in staff development and training costs should be anticipated as expectations for functioning in a team environment are increased and as staff are hired to fill multiple roles in the unit or *family*. These cost increases might be offset partially through partnerships with businesses and organizations in the community that utilize a team approach to accomplish their work and, consequently, have some similar training needs. The relational staffing focus necessitates a comprehensive approach to staff development like that described by Lum, Copa, and Pease (1992) as a "shared responsibility of all members of the staff working together in the combined roles of teacher/learner" (p. 34). Other cost dimensions are not expected to be affected by a relational staffing strategy.

Table K.5
Expenditures Per High School Student–Traditional vs. Relational Staffing Focus

ERS Budget Category	Traditional Focus Per High School Pupil Expenditure @ 1.3 Ratio	Relational Staffing Focus Anticipated Change
Total Current Expenditures	$ 5920	0
Total Instructional Services	4002	0
• Classroom Instruction	2939	0
• Special Education	492	0
• Books and Materials	165	0
• Auxiliary Instructional Services	244	-
• Improvement an Development of Instruction	83	+
School Site Leadership	320	-
Total Student Services	463	0
• Health and Attendance	94	-
• Transportation	276	0
• Food Service	18	0
• Student Activities	60	-
Board of Education Services	33	0
Executive Administration	111	0
Central and Business Services	143	0
Maintenance and Operations	492	0
Environmental Conditioning	159	0
Other Current Expenditures	195	0
Capital Outlay	284	0
Debt Retirement	176	0
Interest Paid on Debt	120	0

Note. ++ Substantial increase of more than +20%
+ Moderate increase of +5% to +20%
0 Little or no change anticipated +5% to -5%
- Moderate decrease of -5% to -20%
– Substantial decrease of more than -20%

Integrated Focus

The integration of technology, partnerships, and relational staffing offers a synergistic effect that exceeds the impact of the three dimensions when considered separately. In relation to the typical costs, the integrated focus cost impact is shown in Table K.6. However, the full impact of the New Designs for the Comprehensive High School becomes evident when viewed from an integrated perspective. The impact is best understood in relation to all of the previous cost analyses. Table K.7 is constructed to show a summary of the previous three tables along side of the cost impacts of the integrated focus.

Table K.6
Expenditures Per High School Student—Traditional vs. Integrated Focus

ERS Budget Category	Traditional Focus Per High School Pupil Expenditure @ 1.3 Ratio	Integrated Focus Anticipated Change
Total Current Expenditures	$ 5920	0
Total Instructional Services	4002	0
• Classroom Instruction	2939	0
• Special Education	492	0
• Books and Materials	165	0
• Auxiliary Instructional Services	244	0
• Improvement an Development of Instruction	83	+
School Site Leadership	320	0
Total Student Services	463	0
• Health and Attendance	94	0
• Transportation	276	0
• Food Service	18	0
• Student Activities	60	0
Board of Education Services	33	0
Executive Administration	111	0
Central and Business Services	143	0
Maintenance and Operations	492	0
Environmental Conditioning	159	0
Other Current Expenditures	195	0
Capital Outlay	284	+
Debt Retirement	176	0
Interest Paid on Debt	120	0

Note. ++ Substantial increase of more than +20%
+ Moderate increase of +5% to +20%
0 Little or no change anticipated +5% to -5%
- Moderate decrease of -5% to -20%
– Substantial decrease of more than -20%

Table K.7
Summary of Expenditures Per High School Student for Four Different Emphases

ERS Budget Category	Traditional Focus Per High School Pupil Expenditure @ 1.3 Ratio	Anticipated Change			
		Technology Focus	Partnership Focus	Relational Staffing Focus	Integrated Focus
Total Current Expenditures	$ 5920	+	0	0	0
Total Instructional Services	4002	+	0	0	0
• Classroom Instruction	2939	+	0	0	0
• Special Education	492	0	0	0	0
• Books and Materials	165	0	0	0	0
• Auxiliary Instructional Services	244	+	-	-	0
• Improvement and Development of Instruction	83	++	+	+	+
School Site Leadership	320	0	+	-	0
Total Student Services	463	0	-	0	0
• Health and Attendance	94	0	-	-	0
• Transportation	276	0	+	0	0
• Food Service	18	0	0	0	0
• Student Activities	60	0	-	-	0
Board of Education Services	33	0	0	0	0
Executive Administration	111	0	0	0	0
Central and Business Services	143	0	0	0	0
Maintenance and Operations	492	+	0	0	0
Environmental Conditioning	159	+	0	0	0
Other Current Expenditures	195	+	0	0	0
Capital Outlay	284	++	0	0	+
Debt Retirement	176	0	0	0	0
Interest Paid on Debt	120	0	0	0	0

Note.
++ Substantial increase of more than +20%
+ Moderate increase of +5% to +20%
0 Little or no change anticipated +5% to -5%
- Moderate decrease of -5% to -20%
-- Substantial decrease of more than -20%

Note: Operating cost changes have been analyzed from the perspective of the high school only. No attempt has been made to document and report potential "cost shifts" to other segments of the community.

Equipment

The increased cost of purchasing and utilizing state-of-the-art technology equipment is far less when partnerships with other educational and training institutions or local businesses are utilized. Shared use of technology located off-site, and purchased to serve the needs of other organizations also can meet the needs of high school students if goals are clear and creativity and flexibility are present in the partnership. In fact, sharing of technology can benefit other organizational partners who own and are the primary users of technology when schools are willing to have flexible access to equipment during non-peak times and share in maintenance and operational costs.

Software and Database Access

Similar to equipment costs, software and database access costs can be contained by finding partners with similar needs and with access to appropriate software and databases. Partnerships of this type might be particularly attractive to educational and training institutions who are in a position to serve high school students after graduation and who see an advantage in familiarizing potential students with their programs and services before high school graduation.

Custodial and Maintenance

As mentioned earlier, increased investment in technology will result in increased maintenance and custodial costs; however, a portion of the increase can be controlled by innovative partnerships that locate equipment off-site and by involving students more directly in the care and cleaning of personal and common work areas.

Staffing

The integration of technology, partnerships, and relational staffing has its greatest impact in this area. Support of technology requires a variety of skills and positions not present in the traditional program, including technical support and troubleshooting, monitoring and experimenting with new technology, and supporting and managing the implementation of new technologies that enhance the educational program. The nature of many of these new roles is such that some expectations of the traditional classroom teacher, such as being the ultimate source of knowledge and determiner of a uniform instructional path, will no longer be held. Conversely, other skills as noted above will be required. This phenomenon combined with a staffing philosophy grounded in serving the needs of learners—adolescents and adult—and increased interpersonal support argues strongly for multiple staffing roles, each contributing to the overall goals of quality, flexible educational opportunities for learners.

In summary, the approach described above will require an increase in the staffing required to offer the services to which the New Designs is committed; however, the use of multiple partnerships and relational staffing could reduce the impact to a negligible level.

Transportation

The need to transport students from the primary learning environment of the high school to a variety of locations to access technology, participate in experiential learning environments, and a variety of other activities will represent an increase in transportation costs over what is present in the traditional high school setting. However, the lessening of technology cost increases through partnerships and relational utilization of staff members with a variety of expertise and talent will more than offset transportation cost increases. In addition, options discussed previously for minimizing transportation costs would reduce further any increase.

Summary

The interplay of the three primary areas of focus—educational technology, partnerships, and relational staffing—has a dynamic effect on the opportunities and costs associated with the New Designs for the Comprehensive High School. This paper has considered each perspective individually and concluded with the integration of all three focus areas. Several important factors should receive attention by design groups that are contemplating the comparative costs associated with operating a comprehensive high school according to the New Designs. These are:

- Operational costs associated with the traditional high school, although useful points of reference for comparison, are not necessarily adequate or appropriate to accomplish the mission of high schools.

- Operational costs associated with implementation of the New Designs will vary in response to local circumstances and conditions. This variability should be taken into account by local planning committees.

- Equipment and material costs will increase as technology utilization increases, but partnerships and relational staffing arrangements potentially can offset a significant portion of the costs.

- The more students take responsibility for the care and cleanliness of their work spaces, the less likely are custodial and maintenance costs to increase significantly.

- The more the work environment of the high school is organized and operated consistent with the adult world of work, the more opportunities are created to share equipment, materials, human resources, training activities, and to contain costs.

- Increases in partnership activities are likely to be accompanied by increased transportation needs.

- A relational staffing approach based on a *family* metaphor offers a variety of possibilities to utilize special expertise and multiple roles in a flexible response to student learning needs without increasing costs significantly.
- Creative partnerships involving shared equipment, facilities, and human resources can result in significant new access opportunities to students without significant new costs to schools and their partners.

Questions to Consider

In addition to the questions associated with the assumptions and limitations of this operating cost analysis, and those that concern the absence of complete information about the operating costs associated with the typical comprehensive high school, the Design Group raised other significant issues for further discussion. These issues are likely to surface as local design teams take-on the redesign of the comprehensive high school.

- How much support and orientation will students coming from a traditional middle school or junior high school require for success in the New Designs High School?

- To what extent will technology be made available to all students outside of the school environment? Will all students have access to technology at home?

- What will be the impact of the New Designs for the Comprehensive High School on special needs students?

- If success is achieved at the point where students move on to new learning, how much might built-in course redundancy be reduced? And, what would be the financial impact?

- What will be the status of co-curricular activities?

- To what extent will students be responsible for maintaining the school community (i.e., custodial services, tutoring other students, school governance)?

- How will transition from high school to adult roles in society be supported?

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APPENDIX L

The Comprehensive High School: An Historical Perspective

THE COMPREHENSIVE HIGH SCHOOL: AN HISTORICAL PERSPECTIVE

by
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THE COMPREHENSIVE HIGH SCHOOL: AN HISTORICAL PERSPECTIVE

The purpose of this report is to chart a brief history of the comprehensive high school in the United States designed particularly to highlight those key decisions that make them what they are. In so doing, the perspective taken is that the so-called comprehensive high schools we see on the American landscape—and now in many other countries—are human productions fashioned after what was considered to be practical at the time. The practical considerations entering into their evolving-form means reaching for ideals and being realistic about operating constraints. These considerations are people-made with a history exposing key decisions that have made them what they are. Therefore, the emphasis for analysis in this report was given to seemingly important national statements, decisions, and studies about comprehensive high schools. The limits of time available and length of the report required the selection of only the most important, and then only a brief treatise on each.

The report was developed through use of historical analyses of original writings related to comprehensive high schools and secondary analyses of these writings. The review starts in the early 1600s and traces the comprehensive high school's development through to the 1980s. The first section of the paper is organized by chronology with the following headings:

- 1600-1890—Getting Started
- 1890-1920—Basic Reform/Social Efficiency
- 1920-1940—Reorientation/Being Progressive
- 1940-1960—Reaction/Subject Centering
- 1960-1980—Relevance/Equity
- 1980s —Return to Basics/Excellence

Within each section, key statements, studies, decisions, and changes are cited along with analysis of their reasons, actors, and consequences where apparent. Following this section is an attempt to look across the years of development in terms of selected characteristics of the comprehensive high school: scope, purpose, curriculum, instruction, and leadership.

What became evident during the review was that many of the characteristics of comprehensive high schools often taken for granted (as givens) might profitably be submitted to requestioning—a recognition that things did not always exist as they are today. Conscious decisions (however complex) were made to make them the way they are—these decisions can be revisited to examine reasons behind them and whose interests were served, as well as intended and actual consequences. Consideration can be given to the appropriateness of these decisions for present and future conditions.

1600-1890: Getting Started

One must begin this story someplace, so why not 1607 with the Pilgrims' landing? The first schooling in this country was done in the home, a combination of elementary and secondary education. It was an early form of *life adjustment education*. Next came the church as an educational agency for both young people and adults—stress was on learning codes of behavior as guides for daily living. Those who could afford to, brought tutors for their families from England or France. Also imported for vocational training was the guild system, in which crafts were learned by apprenticeships from experts. The first formal schools were the *home* or *kitchen* schools in which women gathered a few children in their kitchens to teach the rudiments of reading, writing, and arithmetic.

Next came the Latin Grammar schools, which can be thought of as a combination elementary and secondary school with students entering at age seven or eight and leaving at fifteen or sixteen. Their purpose was the preparation of selected boys (and much later girls) for admission to college. The first Latin Grammar school, the Boston Latin School, opened its doors in 1635. For the next one hundred years these schools dominated the educational scene. Another import from Europe, the curriculum of these schools was of a classical nature (i.e., Latin, Greek, Hebrew, history, Bible, and mathematics). Here one also sees the first substantial influences of colleges on the program of studies in the elementary and secondary schools. On different dimensions, religion was usually an integral part of these schools—separation of church and state was not an issue; rather, integration was the norm. These were schools with stern learning environments (e.g., recitation, rote memory, corporal punishment) with few of the niceties of present day high schools.

In 1647 the Commonwealth of Massachusetts lead the way toward public support for schools by passage of the Old Deluder law. This law set a precedent for state responsibility for public schools. The law called for towns of fifty families or more to provide instruction in reading and writing and towns of one hundred families to establish grammar schools as a way to make sure that citizens could read the scriptures and thereby delude Satan. Even though the penalties for not acting in accord with this law were trivial and not enforced, the law did establish the idea of state sanctions against communities not providing educational opportunities. However, the Latin Grammar schools established as a result, fulfilled the needs of only a small, elite part of the population; these schools were *not* truly public in the sense of being free and open to all.

From the mid 1700s until the Civil War period, a second type of institution emerged but providing secondary education—the academy. The academy was designed to better meet the needs of western expansion and the need for skilled workers in a nation moving toward industrialization. The first academy, the Philadelphia Academy and Charitable School, was set up by Benjamin Franklin in 1751. The purpose of the academy was to prepare young people for success in life and the business world—study of English (rather than Latin) was emphasized. Classical subjects also were included, as well as with modern languages and science. These institutions formed a *bridge* of sorts for translational form before the grammar schools and the public high schools. They made secondary education attractive and available to the middle class by increasing the variety of occupations for which preparation was given, and reducing tuition. Academies were supported by endowments, tuition, and in some cases, state funds. Although neither wholly public nor private, for a time the academy served as the popular institution for the masses of students. By 1850 there were approximately 6,000 academies—at the time it was the dominant institution providing secondary education.

In 1821, the first U.S. high school, Latin Classical School, was founded in Boston. Three years after its opening the name was changed to English (as opposed to Latin) High School. The three-year curriculum stressed English, mathematics, history, and science.

Shortly after the Civil War the public high school began to emerge (in contrast to the academy) "as the institution that the people of the United States would choose for the education of their adolescents" (Raubinger, Rowe, Piper, & West, 1969, p. 9). By 1860 there were about three hundred high schools of this kind usually small and selective (e.g., entrance by examination) schools. Their number increased to six thousand by 1890, with still an average enrollment of only forty. The first public high schools were set up in 1838 in Philadelphia, in 1847 in Cincinnati, and in 1856 in Chicago. While in 1870 the number enrolled in the common school (elementary level) was about seven million and by 1890 about 12.5 million, the public high schools enrolled only 80,000 in 1870 and 360,000 in 1890. These facts serve to point out that these public high schools were still not attracting a high percentage of students—with only 360,000 enrolled in 1890, there were almost three million of the appropriate age group not enrolled.

Starting in the 1830s, the common school movement was taking effect at the elementary school level, only to have a much later effect at the high school level. The movement occurred as a series of state movements for the reform of elementary education, which were congruent in time and goals moving from East to West across the country. The goals were: (a) free education for all, (b) creation of a trained educational profession, and (c) state control over local schools. In essence, it was a commitment to deliberate use of education as a tool for social manipulation and what was seen as social progress. The idea was for all young people to be educated in common subjects and values—to socialize students to the needs of a democracy and industrialized economy (this goal was particularly focused on the children of the poor and of immigrants, who were then not likely to be attending school). It led to elimination of tuition for the then-called district schools, age grading, to standardized curricula and tests. (The district school was a legal entity created earlier as the population moved West and there was a need to band together over a larger geographic area in order to provide tax resources as partial support of schools). During this time the enrollment in school of youth ages five to nineteen increased from forty percent in 1840, to fifty to fifty-six percent in 1850, and to sixty percent in 1860. It was not until the 1900s that the concepts of the common school would be extended to the public high school.

Also during the 1800s, a series of laws and court cases aided the extension of secondary education in the United States. In 1827, the Commonwealth of Massachusetts passed a law that towns of five hundred or more families maintain a high school with a ten-month program. The first compulsory attendance law was passed in this same state twenty five years later. On another front in 1874, with the Kalamazoon case decided by the Supreme Court of Michigan, precedent was set for school districts to use public funds to establish and operate high schools—this affirmed that the secondary school was a legitimate part of a public school program. From here, the public high school took hold as a link between public elementary school and public university and began to develop its present character—the word *comprehensive* was, however, not yet in use.

1890-1920: Basic Reform/Social Efficiency

Committee on Secondary School Studies

The Committee on Secondary School Studies was appointed by the National Education Association in 1892. As noted earlier, this was a time when most youth of high school age were still not in school. Those who were in high school were mainly from the elite class and "the average length of the school term was 135 days and the average number of days attended per student enrolled was 86. Total expenditures on public education were only $140,000,000" (Raubinger, Rowe, Piper, & West, 1969, p. 10). The high school was very similar to college in curriculum, student body, and staff.

The Committee on Secondary School Studies was composed of five university presidents, a college professor, a commissioner of education, and three principals. It was chaired by Charles W. Eliot, President of Harvard University. The Committee had nine subcommittees, each responsible for a subject matter area (e.g., Latin, Greek, English, mathematics). One perspective on their charge was that it was to reduce the chaotic relationship between high school preparation and college admission.

The report of this committee was probably the first that could be considered national in scope and influence. It was to set a pattern for secondary schools in terms of purpose and course offerings and schedule. The influence of the committee report came from the prestige of its members, their access to means of reaching educational leaders (e.g., journals, conferences), and their control over college admission standards. Their challenge was to bring some kind of order out of the often chaotic conditions of secondary education curricula across the country, mainly so that graduates of these schools could be admitted to colleges and universities with the expectation that they would have some common and essential background preparation.

In terms of the purpose of the high school, the committee's recommendations seem to imply preparation for college—very specific recommendations were made about academic subjects such as Latin, Greek, English, modern languages, mathematics, science, history, and geography. Very little is said about subjects that might be called avocational or vocational, except that they might be provided as options. A major point of unanimous agreement designed to simplify high school programs was "that every subject which is taught at all in a secondary school should be taught in the same way and to the same extent to every pupil so long as he pursues it, no matter what the probable destination of the pupil may be, or at what point his education is to cease" (Raubinger, Rowe, Piper & West, 1969, p. 39).

The lay out of high school course offerings and student programs recommended by the Committee closely approximates what one might see today, except for changes in the course titles and time allotment to courses. Although the general tone of the recommendation appears to belie a purpose of the high school as preparation for college, the last section of the general report states:

> The secondary schools of the United States, taken as a whole, do not exist for the purpose of preparing boys and girls for college. Only an insignificant percentage of the graduates of these students go to college or scientific schools. Their main function is to prepare for the duties of life that small proportion of all the children in the country—a proportion small in number, but very important to the welfare of the nation—who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school.... A secondary school program intended for national use must therefore be made for those children whose education is not being pursued beyond the secondary school. The preparation of a few pupils for college or scientific school should in the ordinary secondary school be the incidental, and not the principal object. (Raubinger, Rowe, Piper, & West, 1969, p. 70)

Church and Sedlak suggest that "The committee argued... not that a college preparatory course was not the best education for everyone at the high school level, but rather, that the best preparation for life was also the best preparation for college. The committee wished to enable students to postpone their decisions about attending college as long as possible" (p. 294). Their approach to dealing with the fate of the student who did not go on to college (then about three-quarters of the high school population) was to decrease emphasis on the high school's purpose of preparing students for college and set up standards for a curriculum that would prepare students adequately for life or college. Four prototype curriculum programs were proposed entitled classical, Latin-scientific, modern languages, and English. The programs were similar in requiring four years of English, four of mathematics, three of history and four to nine years of foreign languages.

A significant difference with the past regarding college admission requirements seen in the Committee's recommendation was to consider the quality and depth of instruction as more important than subject matter. Their proposal established a limited elective system and opened the high school curriculum to modern subjects (e.g., science, history, English). Major reaction to these recommendations came from the classicists who felt threatened in terms of their subjects (e.g., Latin, Greek) and the consequences of favoring utility over culture. It is appropriate to remember the context of the high school at this time: the Committee probably believed that the high school would remain the training ground of the elite, that it was an integral part of higher education, and that it was not an institution for the masses (elementary and vocational training institutions were to serve this purpose). Even so, the committee's primary concern seemed to be to set up program standards so that graduates of their *good* high schools could be readily admitted to colleges if the students so chose.

Commission on the Reorganization of Secondary Educations

After 1900, criticism of the report of the Committee on Secondary School Studies began to take a new twist—it was too influenced by the college interests and was too narrow in its preparation for life. With the professionalization of secondary educators, they moved away from the college image and more toward a similarity of interest to the elementary school. With this came a move to make secondary education a part of the *common* school—to make it a part of universal education for all youth. During this period, the curriculum of the high school was called into question as to its usefulness in real life for all youth. Secondary school leaders advocated a function of the high school in assisting youth in efficiently finding their place in society and being maximally productive in this place. In this way the high schools promised to make society run more smoothly with less conflict by shaping students to social needs. Vocational education was a very visible concern for secondary school leaders, justified by inadequacy in the supply of trained workers, by high drop-out rates from schools because of lack of relevance, as a way to deal with needs of less bright students, and as a clear link of high school to preparation for life. The emphasis on differential preparation for work in high school brought into play the traditional doctrines of democracy and the importance of a common school for everybody. The implications of this interplay were most explicit in the decisions that this position required of high school staff—if there was to be preparation for different work roles, how were the parting decisions to be made?

The vocational guidance movement began about 1906 with Frank Parsons (cited in Church & Sedlak, 1976), whose social engineering ideology can be seen in his statement, "Life can be moulded into any conceivable form. Draw up your specifications for man... and if you will give me control of the environment and time enough, I will clothe your dreams in flesh and blood" (p. 307). Given the historical content of a prevalent the commitment to social efficiency, and the context that most of vocational education was developing in institutions separate from the high school, the Commission on the Reorganization of Secondary Education was appointed to lay out a new direction and framework for secondary education—enter the *comprehensive high school.*

The commission was appointed by the Board of Directors of the National Education Association in 1913. It evolved out of an earlier committee focused on the study of high school-college relationships. The commission was chaired (and their reports mostly authored) by Clarence Kingsley, who had recently been a mathematics instructor at Brooklyn Manual Training High School. In stark contrast to the Committee on Reorganization of School Studies, its membership was largely drawn from secondary schools rather than universities. The Commission, like the earlier Committee, had a series of subcommittees investigating various subject matter areas (this time including vocational education areas) and special topics.

The Report of the commission published in 1918 (cited in Raubinger, Rowe, Piper, & West, 1969) was indeed aimed at reorganizing secondary education. Its initial sentence was to set its tone, "Secondary education should be determined by the needs of the society to be served, the character of the individuals to be educated, and the knowledge of educational theory and practice available" (p. 102). The placing of *society* before the *individual*, where there is conflict, is an echo heard throughout the report. The role of education in a democracy was also stated up front: "Education in the United States should be guided by a clear conception of the meaning of democracy" (p. 105). The meaning proposed was: "The purpose of democracy is to organize society that each member may develop his personality primarily through activities designed for the well-being of his fellow members and of society as a whole" (p. 105). The implication for education was that "education in a democracy, both within and without the school, should develop in each individual the knowledge, interests, ideals, habits, and powers whereby he will find his place and use that place to shape both himself and society toward even nobler ends" (p. 105). Based on a casual analysis of the activities of an individual, the Commission proposed its famous Seven Cardinal Principles outlining the purpose of secondary education: (a) health, (b) command of fundamental processes, (c) worthy home membership, (d) vocation, (e) citizenship, (f) worthy use of leisure, and (g) ethical character. These were the ways secondary education was to contribute to the social efficiency of society.

The then prevalent interest in vocational education was set in perspective to the other objectives by the Committee's statement that "it is only as the pupil sees his vocation in relation to his citizenship and his citizenship in the light of his vocation that he will be prepared for effective membership in an industrial democracy" (p. 112). This approach of first stating purpose and then ways and means was to serve as a guide to future attempts to state directions for education.

In arguing for comprehensiveness the report states, "No curriculum in the secondary school can be regarded as satisfactory unless it gives due attention to each of the objectives of education outlined herein" (p. 117). The curriculum approach recommended for secondary education was a combination of specializing and unifying functions:

> The ideal of a democracy . . . involves, on the one hand, specialization whereby individuals and groups of individuals may become effective in the various vocations and other fields of human endeavor, and, on the other hand, unification whereby the members of that democracy may obtain those common ideas, common ideals, and common modes of thought, feeling, and action that make for cooperation, social cohesion, and social solidarity. (p. 118)

Specialization was tied to progress, unification to concerted action. Specialization was to occur through a curriculum differentiated by vocation (e.g., agriculture, business, clerical, industrial, fine arts, household arts, and academic). Unification was to be accomplished by housing the students under one roof and requiring a series of *constant* subjects for all students. The other categories of subjects were the curriculum *variables* (vocational) and free *electives* (nonvocational, special interest). The degree of training for specific vocations was to depend on the vocation, facilities available to the school, and opportunity the student may have to obtain training later.

The report advocated the notion of a comprehensive high school (earlier called a *composite* or *cosmopolitan* high school) which embraced "all curriculum in one unified organization" and "should remain the standard type of secondary school in the United States" (p. 121). This position on the comprehensive school was based on increased effectiveness for vocational education (e.g., ease and flexibility in changing vocational objective, wider range of knowledge by teachers of various vocations, opportunity for students to develop personal contacts valuable to them vocationally), for unification (e.g., development of degree of self-consciousness as groups and federation into larger whole), for objectives other than vocational (e.g., economy of scale in purchase of equipment, wider offering for leisure activities, larger faculty from which to draw leadership), for accessibility (e.g., students can go to closest school rather than one specializing in their vocational choice), for adaptation to local needs (e.g., curriculum can bend to local community needs and interests), for effective organization of curriculum (e.g., allows justification of curriculum directors).

The final recommendation was to make secondary education essential for all youth:

> To the extent to which the objectives outlined herein are adopted as the controlling aims of education, to that extent will it be recognized that an extended education for every boy and girl is essential to the welfare, and even to the existence, of democratic society . . . . This commission holds that education should be so reorganized that every normal boy and girl will be encouraged to remain in school to the age of eighteen, on full time if possible, otherwise on part time. (pp. 127-128)

The major critical reaction to the commission's report came from a faction of the vocational education community represented by David Snedden, in his position that the report missed the significance of vocational education and that only an imitation of vocational education could be provided within the constraints of the comprehensive high school—specialized vocational schools were necessary to do an adequate job.

1920-1940: Reorientation/Being Progressive

The Reorientation time period spans from the end of World War I, through the Great Depression, to the beginning of World War II. Besides these tumultuous socio-economic happenings, it was once again a time of substantial increases in enrollments for the secondary school as it moved to its role as part of mass education. In 1920, 2.5 million students were enrolled in secondary schools; by 1930 it was 4.8 million; and by 1940, 7.1 million. Expressed as percents of the youth ages fourteen to seventeen, the increase for these years was 32.3 percent, 51.4 percent, and 73.3 percent, respectively. Four studies all taking place during the 1930s will be used to suggest the types of decisions being made about the comprehensive high school during this time. Recapitulating, this was a period in which it was reaffirmed that the secondary school should remain comprehensive and that it be made the custodian for *all* American youth. Those responsible for secondary education during this time seemed to come to the position that large numbers of these youth were incapable of scholarship. The effects of the depression and war promoted much debate about the role of the school in social reconstruction (as opposed to socialization only)—this new role was at least partially rejected in the interests of the notion of a wider vista for the working of democracy. The twenty year period ended with the beginnings of the idea of *life adjustment education* and the triad differentiation of the curriculum into *academic*, *vocational*, and *other* (general).

Committee on Reorientation of Secondary Education

The Committee on Reorientation of Secondary Education, composed of leaders in secondary school administration, was appointed in 1932 by the National Association of Secondary School Principals and made two reports during 1936 and 1937 dealing with the issues and functions of the secondary schools. The ten identified issues facing secondary education concerned questions of: (a) educating all youth at public expense, (b) retaining all pupils as long as they wish to remain, (c) development of individual versus contribution to society, (d) common or differentiated curriculum, (e) including vocational training versus providing only general education, (f) emphasis on preparation for advanced studies versus recognition of the value of courses for all purposes, (g) acceptance of conventional school subject categories versus categories related to students' future social functions, presenting merely organized knowledge or including attitudes and ideas, adjustment to prevailing social ideals versus reconstruction of society, and secondary education as merely a phase in a longer education continuum or as a distinct yet articulated part with peculiar functions of its own.

After historical analysis and considering pro and con arguments on each issue, the committee took the following positions: (a) continue a definite program in the school to integrate youth with each other and with society to develop socially-minded and socially-active individuals; (b) satisfy the important immediate and probable future needs of students; (c) acquaint students with the materials of living, represent the accepted way of life and reveal opportunities for higher activity in the major fields of their heritage of experience and culture; (d) explore higher and increasingly specialized interests, aptitudes, and capacities of students toward further study or work; (e) systematize knowledge in ways that show a wide range of application; (f) develop interests in major fields of human activity as means to happiness, to social progress, and to continued growth; (g) guide students into wholesome and worthwhile social relationships, maximum personal adjustment and advanced study or vocation in which they will be most successful and happy; (h) use in all courses methods that demand independent thought, principles of research, and provide practice (individual and cooperative) in the activities of an educated person; (i) begin and gradually increase differentiation of education on evidence of demonstrated aptitudes and interests along with general education to the extent possible and profitable; and (j) retain each student until the law of diminishing returns begins to operate.

Differentiation of the curriculum was rationalized on the basis of individual differences, differences in vocational choice, differences in institution of further education, differences in interests of pupils—the difficulty was in deciding when differentiation should begin and how much should be provided. The committee suggested the principle:

Concerning the issue of role of the school in reconstruction of society versus adjusting to prevailing conditions, the committee took a mid-road; "secondary education should dispose schools favorably to social change," but it "should not plan the reconstruction of society in any sense that would commit the young to specific changes in the social order. It may legitimately attempt to foresee the probable course of events and to prepare youth to deal with it intelligently" (p. 136).

Commission on the Relation of School and College

The Commission on the Relation of School and College was appointed in 1930 by the Progressive Education Association to explore possibilities for better coordination of school and college work and to seek a way to provide freedom for secondary school to attempt what was felt to be needed—a fundamental reconstruction. The resulting study began in 1933 and concluded in 1941 with a five-volume report; the study was more commonly known as the Eight-Year Study. It was actually an experimental-type study involving twenty-nine high schools from across the country and three hundred colleges and universities. The colleges and universities agreed to relax their admission policies as a means to give the experimental schools an opportunity to reconstruct their curriculums and yet not penalize their students who might wish to go on to school. Later students from experimental and control schools were compared in terms of success in college.

The finding of *no difference* in experimental and control students was important to modification of traditional college entry requirements thereby making it possible for schools to experiment with their programs without jeopardizing opportunities of students who wished to go on to school. However, of equal relevance were the inadequacies identified in the secondary schools and what was learned from the experimental schools concerning their resolution. The list of inadequacies posed by the commission was not too unlike what might be heard some fifty years later. Secondary schools in the United States: (a) did not have a clear-cut, definite, central purpose; (b) failed to give students a sincere appreciation of their heritage as American citizens; (c) did not prepare adequately for the responsibilities of community; (d) seldom challenged the students of first-rate ability; (e) neither knew their students well nor guided them wisely; (f) failed to create conditions necessary for effective learning; (g) seldom released and developed creative energies of students; (h) had a curriculum that was removed from the real concerns of youth; (i) traditional subjects had lost much of their vitality and significance; (j) produced graduates were not competent in the use of the English language; (k) showed little evidence of unity in the work of the typical high school; (l) evidenced a lack of continuity from semester to semester or year to year which almost matched the absence of unity; (m) were characterized by complacency; (n) had teachers who were not equipped for their responsibilities; (o) had few principals conceived of their work in terms of democratic leadership of the community, teachers, and students; (p) were without any comprehensive evaluation of staff; (q) issued a diploma that meant only that the student had done whatever was necessary to accumulate the required number of units; and (r) maintained a relationship between school and college that was unsatisfactory to both institutions. All this back in 1934!

Initially they suggested that these inadequacies were due to the rapid growth in schools, the necessity of employing inadequately prepared teachers, and the lack of time to adjust to new responsibilities. What did they learn about dealing with these inadequacies in the experimental schools? They learned that: (a) colleges can secure the information needed for admission decisions without restricting the secondary school to a prescribed curriculum; (b) secondary schools can be trusted with responsibility for their curriculums; (c) failure of schools and colleges has resulted in much waste of time, money, and energy; (d) effective school reconstruction requires thorough preparation (meaning time, cooperative deliberation involving all teachers and administrators as well as parents and students), a non-piecemeal approach, research, exploration, experimentation, and evaluation; (e) often schools must find their own answers to their most puzzling questions; and (f) direction must be guided by overall purpose. According to the commission, the concept of the purpose of education which evolved from the participating schools was that

> the purpose of the school cannot be determined apart from the purposes of the society which maintains the school. The purposes of any society are determined by the life values which the people prize. As a nation we have been striving always for those values which constitute the American way of life. Our people prize individual human personality above everything else. We are convinced that the form of social organization called democracy promotes, better than any other, the development of worth and dignity in men and women. It follows, therefore, that the chief purpose of education in the United States should be to preserve, promote, and refine the way of life in which we as a people believe. (p. 188)

It is interesting to note that following their initial years of study, the commission reports that, "application of principles of democracy to the life of the school would cut deep. To develop a sense of worth in each individual, to promote free participation by each one in the affairs of the school, and to lead everyone to think for himself would demand radical change in many aspects of the curriculum and ways of teaching" (p. 191).

American Youth Commission Survey

The American Youth Commission was appointed by the American Council on Education in 1935 (Raubinger, Rowe, Piper, & West, 1969). A major accomplishment was a survey of a representative sample of thirteen thousand Maryland youth, reported in *Youth Tell Their Story* (American Council on Education, 1938). An extensive case was also made for the generalizability of their findings to all of the United States. The study focused on identifying the needs of youth regarding home, school, work, leisure, and religion. Some of the more important issues set forth, which should be interpreted in the light of an economy emerging from depression were: (a) necessity to equalize educational opportunities as a paramount problem, (b) need to find employment for youth as they leave school, (c) economic security as youth's most urgent personal need, (d) guidance for youth a pressing necessity, (e) lack of appropriate and adequate vocational training, (f) general secondary education in need of serious reorganization, (g) increased leisure time for youth emerging as a significant social problem, (h) need for increased health education, (i) indifference of youth to civil responsibilities, and (j) need for community planning for youth. Concerning equality of educational opportunity, the report (cited in Raubinger et al., 1969) states, "These are cogent social, as well as political and economic, reasons for making every effort to break up this conspiracy of forces that tends to keep certain groups more or less permanently submerged" (p. 246).

Educational Policies Commission Report

The Educational Policies Commission was established in 1935 jointly by the National Education Association and the American Association of School Administrators. Its purpose was to examine major issues in education and make recommendations for action. Two of the issues initially pressing for solution were financing of public education in light of demand for and trend toward federal participation and control of public education in light of new agencies taking on educational functions. The commission issued many reports, one of which focused on education for *all* American youth. In this report the commission (cited in Raubinger, Rowe, Piper, & West, 1969) states:

> When we write confidently and inclusively about education for all American youth, we mean just that. We mean that all youth, with their human similarities and their equally human differences, shall have educational services and opportunities suited to their personal needs and sufficient for the successful operation of a free and democratic society.... Each of them is a human being, more precious than material goods or systems of philosophy. Not one of them is to be carelessly wasted. All of them are to be given equal opportunities to live and learn. (p. 303)

This report was published in 1944 as World War II was nearing an end. In the report, the commission's description of the issues and analysis are portrayed in the form of two histories of education: *The History That Should Not Happen* and the *History That Must Be Written*. Essentially, the first is a history of the takeover of education by the federal government. The second depicts federal financial aid but retention of state and local control of education by government, teachers associations, and the public. Additionally, the commission developed recommended prototypes for rural and city schools in scenario format entitled "The Farmville Secondary School" and "Schools for Youth in American City."

This report of the commission was summarized by the National Association of Secondary School Principals in 1944. The summary (cited in Raubinger, Rowe, Piper, & West, 1969) features a list of ten "Imperative Educational Needs of Youth," which covered student's need for: (a) salable skills and understandings and attitudes to make workers intelligent and productive participants in economic life (need supervised occupational experience as well as classroom education); (b) good health, physical fitness, and mental health; (c) understanding of rights and duties of citizens of a democratic society as well as competence to perform these obligations and to have understanding of the nations and peoples of the world; (d) understanding of importance and conditions conducive to successful family life; (e) understanding of how to purchase and use goods and services intelligently; (f) understanding of science; (g) development of the capacity to appreciate beauty; (h) ability to make wise use of leisure; (i) development of respect for others, development of insight into ethical values and principles, and understanding of how to work cooperatively and grow in moral and spiritual values of life; and (j) ability to grow in ability to think rationally, express thoughts clearly and read and listen with understanding (p. 304-305). The emphasis on local initiative in controlling education is evidenced in the closing remarks of the commission (cited in Raubinger et al., 1969) about their Farmville and American City Schools:

> Would you like your children to attend schools like those of Farmville and American City? They can, if you really want them too. Enough is known about how to operate such schools, there is plenty of timber and stone to build them, plenty of wealth to finance them. Your children, your community, your entire state and nation can have schools as good as, or better than, the schools described in this book as soon as you and enough other Americans demand them and do your own special but essential part in bringing them into existence. (p. 351)

1940-1960: Reaction and Subject Centering

Decisions affecting comprehensive high schools during the 1940s and 1950s can be better understood in the context of the larger social and economic developments affecting the United States during this time. These developments include, in rough order, post World War II adjustments to return of service men and women and peace economy; the massive baby boom affecting the schools by 1950; Cold War propaganda and fears giving the country a sense of unifying purpose (and insecurity); and rapid suburbanization and resurgence of individualism. Over time, each of these developments seemed to affect changes in the high school, which did not all resolve themselves by 1960.

By the end of the 1950s there was a persuasive demand for reform of the high school by a return to an academic emphasis, which had supposedly characterized education before progressivism. But support for this reform was largely absent in the 1940s. Rather, at that time, the thrust was toward better serving those students (estimated to be approximately sixty percent of high school age students) who were not appropriately served by vocational education programs or college preparatory programs. The high school was to perform a *custodial function* for these *marginal* students to keep them off the labor market (where they would be unemployed or compete with adults) and busy (in order to prevent crime and social unrest). The curriculum proposed for this group was entitled *life adjustment* education and focused on the family, child-rearing, spending habits, citizenship, and leisure-time activities (rather than earning a living or preparing for further education). Life adjustment education embodied much of the progressive reforms of the previous forty years. The review of the Commission of Life Adjustment Education for Youth (U.S. Office of Education, 1951) seeks to communicate some of the specifics of this reform.

However, by the early 1950s the tide of public opinion was beginning to be changed by educational critics such as Bestor (1953), Lynd (1953), Hutchins (1953), Smith (1949) and (1954), Bell (1949), and Rickover (1959). The critics, although different in many respects, were similar in characterizing education as aimless, in calling for return to basic academic subjects and mental discipline, and in blaming the education profession, particularly teacher training institutions. In a sense, where earlier reform movements had called for the development of an education profession to take control from the subject matter specialists, the criticism of this period suggested the reverse, with educational control to come from the various disciplines (who better knew what was to be taught).

The press of the Cold War and the Soviet launching of Sputnik in 1957 provided an answer for the question of educational purpose—to compete with totalitarianism, particularly in technical superiority. Even before Sputnik, James B. Conant and Admiral Rickover were concerned about the lack of adequately trained workers for U.S. scientific and defense purposes—this was a renewed focus on vocational efficiency, but now for the vocations of scientists as opposed to skilled craftspersons. Rickover, based on his knowledge of European school systems, called for development of specialized schools to improve the effectiveness of both scientific and technical training. Conant, on the other hand, advocated remaining with the notion of a comprehensive school, but one which operated as an intellectual meritocracy. For him, public schools should abandon their custodial role and sort out from each generation the most capable (*intelligent*) students and challenge them to their fullest as preparation for political and technical leadership. The comprehensive high school provided a mechanism for the widest possible search for talent yet seemed to meet the democratic value of providing equal educational opportunity. With less emphasis, he also was concerned about providing a good education for those who would need to support the political and technical leaders.

A study by Keller (1955) provides insights into the role of the comprehensive and specialized schools, from the point of view of someone with background and experience in vocational education. Following this review is a brief analysis of one of Conant's (1959) first studies of the high school, entitled *The American High School Today*. The study was well financed, reported in a short, highly readable form, and widely disseminated. Conant's position seemed to stem the tide of criticism of the comprehensive high school (as opposed to specialized schools) and his recommendations were widely adopted as a way to make high schools more purposeful and effective in the social context described earlier.

A large part of Conant's recommendations, and those of the Committee for the White House Conference on Education (1956), also reviewed later, focused on the need to improve the subject matter and process of education. With Sputnik and the Cold War, educational success was tied to national (rather than local) purposes, such as national defense, which led to the position that the federal government was an appropriate source of funds for improving education. Congress passed the National Defense Education Act in 1956, which provided federal support for crash programs in science, mathematics, and foreign languages (even earlier funds for this purpose came from the National Science Foundation).

The emphasis on curriculum revamping and federal support for this purpose led to a number of significant happenings. First, university scholars from disciplines such as physics, mathematics, and biology began to enter the curriculum development business resulting in the *new* math and physics. Second, these were national efforts (rather than previous dependence on local and state educational agencies for curriculum development) involving a lengthy time of development, testing, and teacher training (retraining). Third, emphasis in these new curriculums was on the *discovery method* rather than learning factual information—to learn as a scientist learns was taken to be the best preparation for a future characterized by technological change. Cognitive psychology was growing in popularity and influence at this time with the work of Piaget, Bruner, and Hunt; application of cognitive psychology suggested that children could learn complex concepts better and earlier than previously thought and that they would be motivated by natural curiosity. In many ways, the discovery approach was similar to that advocated earlier by progressive educators, but its subject matter emphasis had little to do with life adjustment education. Also apparent with the discipline emphasis was lack of concern for the entire impact of the curriculum, how the pieces fit together, and whether it was appropriate for all youth. An emphasis on the earlier concern for producing democratic citizens was noticeably absent. Fourth, the curriculum revisions were expensive and required substantial retraining of teachers. The suburbs were growing very fast during this time; building new schools, were more affluent than inner cities, and because of smaller size, were more easily controlled (changed). This control was coming from a largely upper and middle class group who valued education and dearly wanted an education for their children which would allow them to successfully compete in the modern world. For this reason, the suburbs were often the first to adopt Conant's recommendations and the new curriculums. With these happenings, the seeds were being planted for a major issue of the 1960s and 1970s—inequality of education—receiving its legal impetus with the 1954 Supreme Court Decision of Brown v. Board of Education.

Commission on Life Adjustment Education for Youth

The appointment of the Commission on Life Adjustment Education for Youth by the United States Commissioner of Education was a result of a national conference of educational leaders held in 1947, The National Conference on Life Adjustment Education, which was, in turn, the result of a resolution proposed by Charles A. Prosser at a 1945 Conference on Vocational Education in the Years Ahead. Specifically, Prosser (cited in U.S. Office of Education, 1951) had stated that:

> It is the belief of this conference that, with the aid of this report in final form, the vocational school of a community will be better able to prepare 20 percent of the youth of secondary school age for entrance upon desirable skilled occupations; and that the high school will continue to prepare another 20 percent for entrance to college. We do not believe that the remaining 60 percent of our youth of secondary school age will receive the life adjustment training they need and to which they are entitled as American citizens—unless and until the administration of public education with the assistance of the vocational education leaders formulate a similar program for this group. (p. 15)

This statement (together with another sentence requesting a series of conferences) formed what later became known as the Prosser Resolution.

The basic purpose of the resolution, the resulting regional and national conferences, and the commission, was to increase the effectiveness of schools to meet the needs of all American youth. This purpose was couched in the statistics that a fifth of youth did not enter high school (low participation rate), more than forty percent who entered did not graduate (high dropout rate), many of those who remained in high school were left to engage in activities unrelated to everyday needs of life, and that the baby boom would soon create drastic increases in the high school age group. Less explicit was the post-war labor market context, in which it was believed that youth would have a difficult time finding work. Given the accepted values of providing equality in opportunity to a group not seeming to be served and soon-to-be increasing in number, in the light of labor market needs and college enrollment levels, what were to be the characteristics of an appropriate education for all youth, especially those not seeming to be served by vocational education programs or college preparatory programs? The answer proposed by Prosser and later by educational leaders was *life adjustment education*. It was as if by the 1940s the goal of designing and implementing an educational program preparing a group for college, and another group for immediate employment, was fairly much in place, but that there was still a large group of other youth to be served somehow. Vocational educators and general educators were called upon to form a united effort to work out a mutually accepted solution for an appropriate education for this other group of high school age youth.

The commission on Life Adjustment Education defined *life adjustment education* "as that which better equips all American youth to live democratically with satisfaction to themselves and profit to society as home members, workers and citizens" (U.S. Office of Education, 1951, p. 4). Many of the ideas of the Commission were drawn from earlier studies of the high schools in America (such as those reviewed in this report); the emphasis of this commission was to move these ideas to the point of action through its leadership. A common understanding agreed to by Commission members was that, "Life itself and realistic experiences must increasingly become the basic criterion, if all youth of high school age are to derive maximum benefits from high school" (p. 54). Accordingly, the implications of this position were spelled out under the following headings: (a) "Guidance and Pupil Personnel Services," (b) "Ethical and Moral Living," (c) "Citizenship

Education," (d) "Home and Family Life," (e) "Self-Realization and Use of Leisure," (f) "Health and Safety," (g) "Consumer Education," (h) "Tools of Learning," (i) "Work Experience, Occupational Adjustment, and Competencies," and (j) "Administrative, Financial and Organizational Arrangements." (p. ii) The *general education* curriculum emerged. To implement these recommendations, the Commission felt two things were essential: (a) recognition of the problem of unserved youth by the general public, and (b) a decision by high school faculty to make the best use of available resources to deal with the problem.

Committee for the White House Conference on Education

In 1954 President Eisenhower asked the governors of the fifty three states and territories to join him in making the "most thorough, widespread, and concerted study the American people have ever made of their educational problems" (Committee for the White House Conference on Education, 1956, p. 1). The study report, published in 1956, describes the results of the National Conference and state conferences held in every state. An estimated one half million persons, representing a cross section of the population, was involved in the various sectional, state, and national conferences. Two thousand delegates, about one-third from education, met for five days in Washington, D.C. for the National Conference in November, 1965. The six topics forming the agenda for the conference were

1. What should our schools accomplish?
2. In what ways can we organize our school systems more efficiently and economically?
3. What are our school building needs?
4. How can we get enough good teachers—and keep them?
5. How can we finance our schools—build and operate them? and
6. How can we obtain a continuing public interest in education?

Separate subcommittees worked on each of these questions.

Using input from the subcommittees plus the reports of state conferences and other sub-studies, the Committee formulated a set of summary recommendations, which highlight the following positions: (a) school authorities should emphasize the importance of priorities in education (but little was suggested specifically about what should get priority except education for all need not be inconsistent with providing full opportunity for the gifted and that overspecialization of vocational education should be avoided); (b) careful study of school organization to avoid waste of funds (e.g., many small school districts, need for decentralization of large city schools); (c) quick assessment of school building needs (e.g., many buildings in poor condition, many new classrooms need to serve the baby boom); (d) greater inducements of all kinds to attract and retain enough good teachers and efforts to use teachers time more effectively; (e) new look at how much money is spent on education (e.g., should come from all three levels of government, within next decade, amount should be doubled); (f) take steps to encourage interest and activity of all citizens in school affairs (e.g., citizen advisory groups, parent and teacher organizations; because only the public can create good schools and nurture them); and (g) holding a White House Conference on Higher Education.

The first sentence of the committee report concludes that from the work of the committee, "one fundamental fact emerges: schools now affect the welfare of the United States more than ever before in history, and this new importance of education has been dangerously underestimated for a long time" (p. 7). Reasons suggested for the impatience are that an uneducated populace is a greater handicap to a nation with each passing generation and as an instrument for keeping the nation a land of opportunity. The report states that, "the schools stand as the chief expression of the American tradition of fair play for everyone, and a fresh start for each generation" (p. 4). And later in the section on what schools should accomplish, "The schools have become a major tool for creating a Nation without rigid class barriers. It is primarily the schools which allow no man's failure to prevent the success of his son" (p. 9). The ability of education to give this "fresh start" to each generation was attributed to a broadening concept of education. In characterizing this concept for the future, the committee states:

> It is no longer thought proper to restrict educational programs to the skills of the mind, even though these skills remain of fundamental importance. Schools also attempt to improve children's health, to provide vocational training, and to do anything else which will help bring a child up to the starting line of adult life as even with his contemporaries as native differences in ability permit. The most practical aspect of this new concept

> of education is that it calls for the most careful mining and refining of all human talents in the land—it is in itself a kind of law against waste. (p. 5)

These would be haunting words in the next decades.

1954 Supreme Court Decision

While education, in general, was expanding its purposes and aiming to better serve its students by endorsing the concept of life adjustment education, the Supreme Court made a major decision that was to have delayed, but substantial effects on the comprehensive high school. On May 17, 1954, the court made a unanimous decision delivered by Chief Justice Warren (cited in Tanner, 1972) in stating:

> We conclude that in the field of public education the doctrine of `separate but equal' has no place. Separate educational facilities are inherently unequal. Therefore we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of the segregation complained of, deprived of the equal protection of the laws guaranteed by the Fourteenth Amendment. (p. 78)

The reasoning of the court concerning the effects of segregation was explained as follows:

> Today, education is perhaps the most important function of state and local governments . . . . It is the very foundation of good citizenship.... In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity where the state has undertaken to provide it, is a right which must be made available to all on equal terms . . . . To separate them from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone. (Tanner, 1972, p. 78)

While this ruling struck down dejure segregation as existed largely in the South where separate schools were provided, still remaining for attention was defacto segregation as existed in the North, where schools were segregated largely because of geographic separation caused by community housing restrictions and concentration of lower socio-economic groups in slums and low income housing projects.

The Comprehensive High School

The Comprehensive High School by Franklin J. Keller (1955) was chosen for review here because it was the only book able to be identified which had a title referring directly to the comprehensive school during the 1940-50 time period. Keller wrote it while on sabbatical from the New York Public Schools, where he was principal of the Metropolitan Vocational High School. He was also the author of *The Double-Purpose High School* (1953) and *Principles of Vocational Education* (1948). The study reported in *The Comprehensive High School*, based on visits to seventy seven high schools across the United States, raises many of the issues facing the idea of the comprehensive high school during this time, particularly as they relate to vocational education.

The key question directing this study of American high schools was, "What kind of educational organization will give our children the kind of education they ought to have?" (Keller, 1955, pp. xiv-xv). All through the study, Keller seems to be raising the issue of whether democracy requires uniformity or sameness, especially in high school organization and the curriculum available to each student. He makes the point that different students do have different (occupational) aspirations and there is no reason to evade recognition of this fact, and ultimately there is nothing undemocratic about this diversity. His focus on this issue seems to raise the importance of coming to grips with the meaning of the concept *democracy* as important to sorting out the purpose and means of the comprehensive high school.

Keller posited a series of questions about comprehensive high schools that served to guide his investigation; these questions also serve to pinpoint explicitly some of the issues facing the idea of a comprehensive school during this time period. The questions raised were as follows:

1. What is a comprehensive school? An entity based on philosophy of education or type of organization. Should one seek perfect model and then evaluate others on this basis or search for drives that impel aim for comprehensiveness?

2. What is relation of comprehensiveness to the size and composition of the community? Is comprehensive school only possible and efficient in small community?

3. What is relation in terms of value and status of *knowing* subjects to "doing" subjects in the comprehensive high school? Do most comprehensive schools develop from academic status by vocational accretions?

4. If we learn by doing, is *doing* to be purposeful, socially gainful, and personally beneficial or only doing for activity's sake?

5. Conceding that education for an occupation must be given at some time in life of the pupil, should it be postponed until just before the pupil enters that occupation, or should it begin as soon as any interest in life activity becomes discernible in the child?

6. What are we going to do about prejudice against vocational education? About the low opinion of manual labor? Are and should vocational education classes be repositories for the dull and troublesome?

7. What can we do to promote and get recognition for dynamic leadership in the *doing* phase of education?

8. How are we to reduce the waste in high school education? In the use of students time and school financial resources?

9. To what extent are school systems trying to find out how effective their high schools are?

10. What proportion of high school graduates (and dropouts) later become employers? How to get their support?

11. How is guidance in the high school to become real, dynamic, and truly functional? Are there varieties of intelligence rather than one?

12. How can we get the high schools to understand what vocational education really is, what industrial arts really is, what work experience really is, what cooperative education really is (not *merely* quibbling over words but a *grand* quibbling)?

13. What kind of job can a comprehensive school really do? Does it depend on things the school comprises, the wideness of its scope, and its inclusiveness of community resources? (Keller, 1955)

As a result of his investigations, Keller concludes by defining a comprehensive high school as one which

> aims to serve the needs of all American youth. That is today it accepts without selection all the young people in the area it commands—all races, creeds, nationalities, intelligences, talents, and all levels of wealth and social status. Such a school has as its broadest objective the teaching of all varieties of skill, all kinds of knowledge to all kinds of youth bent upon living socially profitable lives. To each one it seeks to give the course for which he seems best fitted. Its design is to prepare one and all for potentially successful vocations. The comprehensive high school prepares the college-oriented youth for college. It qualifies the non-college-bound youth and, as far as possible, the boy or girl who will drop out before

> graduation for an occupation. It is adapted to give everyone a general education for the common things he will do in life and it may and should give some pupils of high capacity preparation for both college and occupation. (pp. 31-32)

He goes on to enumerate nineteen characteristics of good comprehensive schools. For example, two of the characteristics are: (a) all pupils, regardless of their major subjects or postgraduate plans, must intermingle in the academic classes and in all extra-curricular activities, without restriction; and (b) the principal must have had vocational experience or an intimate vocational background.

On the questions related to the issue of advocating comprehensive versus specialized schools, Keller first portrayed the typical historical development of present day high schools as follows: (a) development of elementary school, (b) development of academic high school, (c) add agriculture and home economics classes, (d) add diversified occupations (business) classes, (e) add industrial arts classes, (f) add more shops, and (g) decision to build another school—should it be another *comprehensive* school or a specialized vocational school?

Keller's answer to this last question is, "the carefully planned comprehensive high school is an adequate educational instrument for the one high school community, but, as the community grows into what is likely to be a great city, it must specialize—wisely and well" (p. 38). The reasoning is that effective and efficient occupational preparation requires the class time, teaching expertise and extensive facilities made possible by specialization. Specialized schools also provide the potential for conveying to students a high value and status to vocational education; for as Keller suggests, "vocational education conceived in prejudice and born with stigma is a vain thing. It engenders hate. It denies democracy. It mocks education" (p. 263). These are factors which promote the attainment of democratic ideals as much as or more than being housed together under the same high school roof.

The American High School Today: A First Report to Interested Citizens

The American High School Today, published in 1959, was authored by James B. Conant, who had been President of Harvard University from 1933 to 1953. The book was financed by a grant from the Carnegie Corporation of New York to Educational Testing Service, who employed Conant to conduct the study. It is included here in preference to other books with similar titles because it specifically focused on the comprehensive high school in contrast to specialized high schools, and because of its subsequent wide visibility and influence. Conant used as his definition of the comprehensive high school one that was proposed by (then) President of Carnegie Corporation, John Gardner (cited in Conant, 1959), who defined it as

> a particularly American phenomenon. It is called comprehensive because it offers, under one administration and under one roof (or series of roofs), secondary education for almost all the high school age children of one town or neighborhood. It is responsible for educating the boy who will be an atomic scientist and the girl who will marry at eighteen; the prospective captain of a ship and the future captain of industry. It is responsible for educating the bright and not so bright children with different vocational and professional ambitions and with various motivations. It is responsible in sum, for providing good and appropriate education, both academic and vocational, for all young people within a democratic environment which the American people believe serves the principles they cherish. (p. ix)

Conant concluded that the idea of a comprehensive high school "has come into being because of our economic history and our devotion to the ideals of equality of opportunity and equality of status" (Conant, 1959, p. 7). The *twin* ideals of equality of opportunity and status were defined as an equal start in a competitive struggle and equal status of all honest labor, respectively.

Following the intent of Gardner's definition, Conant lists three main objectives of a comprehensive high school as being, "first, to provide a general education for all future citizens; second, to provide good elective programs for those who wish to use their acquired skills immediately on graduation; third, to provide satisfactory programs for those whose vocation will depend on their subsequent education in a college or university" (p. 17). The major purpose of Conant's study was to answer the question: Is it possible to fulfill these three functions under one roof and under the same management? His study came at a time when there was considerable questioning of the feasibility of the comprehensive school notion and serious motion to remain with present and to develop new specialized high schools (i.e., separate vocational and college preparatory schools).

The results of Conant's study are based on visits and data collected from fifty five high schools in eighteen states. During the process of analysis, a fifteen-point checklist of criteria was created to assist in identifying comprehensive schools. Using the criteria Conant suggested it was more appropriate to think in terms of "degrees of comprehensiveness." Major areas of the checklist items were: (a) adequacy of general education for all (e.g., offerings in English and American literature and composition, ability grouping in required courses); (b) adequacy in academic elective programs (e.g., vocational programs for boys and commercial programs for girls, opportunities for supervised work experience); (c) special arrangements for academically talented students (e.g., special provisions for challenging the highly gifted, such as summer sessions from which able students may profit); (d) other features (e.g., adequacy of the guidance service, well organized homerooms).

Conant's conclusions were that the United States should reduce the number of small high schools where at least a limited degree of comprehensiveness was not possible and, most telling, that no other radical alteration of the structure of the American high school was necessary—we should remain with the goal of having comprehensive high schools. He developed twenty one specific recommendations which, taken together, outline the important characteristics of a satisfactory high school which is *widely comprehensive*. These recommendations refer to areas such as: the counseling system, individualized programs, required programs for all, ability grouping, English composition, diversified programs for the development of marketable skills, special consideration for very slow learners and highly gifted pupils, and organization of the school day. In making changes toward making high schools even more comprehensive, he suggested using the bootstrap method of adapting the best from that which has been well tried and tested, all within the recognition that there is great diversity in American high schools—meaning there is a need to consider the local situation in order to finally see what is appropriate.

1960-1980: Relevance/Equity

A major concern of the 1960s and 1970s was with using education as a tool to provide equal opportunity for young people in the United States. Schools were to attack the problems of poverty and racial and ethnic discrimination. Where in the later 1950s the schools were used to fight Eisenhower's Cold War, in the 1960s it was Johnson's War on Poverty. Even with this new thrust, however, the attempts at curriculum revision and focus on intellectual capabilities initiated in the 1950s came into being.

In 1967, James Conant authored another study of the American high school, entitled *The Comprehensive High School*. In contrast to his earlier study of the high school in 1959, which was based largely on school visitation and interview, this study was designed around a questionnaire survey of two thousand comprehensive high schools of medium size. In general, he concludes that for an excellent comprehensive high school, one needs an enrollment of at least seven hundred fifty students and sufficient funds. Further, he emphasizes the great differences among schools and variations between states. The American ideal of equal educational opportunity was far from being realized. In keeping with his earlier ideas, he suggested that the comprehensive high school should attempt to achieve the ends of endeavoring, "to provide a general education for all future citizens on the basis of a common democratic understanding; and it seeks to provide in its selective offerings excellent instruction in academic fields and rewarding first class vocational education" (Conant, 1967, p. 4). The major advantage of the comprehensive school (over specialized and selective school) was in providing an opportunity for "students from different backgrounds to learn how to get on with one another" (p. 6). One of the important questions addressed was how wide an offering was necessary by a comprehensive school to do justice to the desires and potentialities of all its students. Conant concluded:

> [A] widely comprehensive high school should as a minimum meet the following criteria: (a) provide instruction in calculus; (b) provide instruction in a modern foreign language for four years; (c) arrange the schedules so that a student may study in any one year English, mathematics, science, a foreign language, social studies, physical education, art or music, (d) provide one or more advanced placement courses, and (e) have enough English teachers so that 'the average pupil load' is 120 or less. (p. 16)

He distinguished between *ability grouping* (where students might be segregated for a single subject) and *tracking* where students are in some way segregated for all classes. The real working of a comprehensive high school was made possible by its electives and effective counseling.

Concerning vocational education, Conant was concerned with the high school having a diversity of offerings; he concluded that instruction in vocational education did not interfere with instruction in advanced academic fields. For him the alternatives to providing vocational education in the comprehensive high school were to develop specialized vocational high schools, or to delay it to the post secondary level of education. He concludes, "My inclination is strongly in favor of including vocational work in a comprehensive high school instead of providing it in a separate high school. My reasons are largely social rather than educational" (p. 62). Those reasons were similar to those given in his earlier study, namely the opportunity for mixing students from different backgrounds.

Conant felt that the main reason for not requiring academically talented programs for everyone was that there were a large number who were unwilling or unable to do the work. His hope was that in the future, with advances in educational technology, the distinction of *academically talented* might largely disappear because it would be possible to have students learn at the same rate and motivation. Then more efforts could be devoted to the social ideals of the comprehensive high school and, thereby, reduce the degree of misunderstanding and prejudice among students.

In some ways, the curriculum revisions and intellectual focus of the early 1960s precipitated the concern for equal opportunity because the revisions were implemented in uneven ways (largely in the suburbs) and were to be criticized for producing an irrelevant curriculum for the average and below average student. A considerable sized group of people were being bypassed of the benefits from the educational reforms. Contrary to what Conant had suggested, research was showing that education, as it then existed, was not redistributing socioeconomic status with each generation, but that poverty was being passed on from grandparent to parent to child—a rather stable culture of poverty existed.

This point was driven home by the large amount of publicity given to massive riots in Harlem (1964), Watts (1965), and Detroit (1967). Social leaders talked of a social dynamite existing in low income urban areas. Schools were enlisted and took leadership in suggesting that education could break the poverty cycle. Educationists again came to prominence, emphasizing a shift of emphasis from subject matter to the learner and their learning problems as opposed to the discipline oriented subject matter specialists, who had advocated and worked on the earlier curriculum revisions So too, more emphasis was placed on teaching marketable skills, since many of the students to be served were not likely to be going on to college. With this shift in direction, there was passage of the Vocational Education Act of 1963 and the Amendments of 1968 and 1976 with much more focus on target populations, special needs learners, and provision of equality of opportunity. Also coming into existence were the Economic Opportunity Act of 1964, which provided for the Office of Economic Opportunity (separate from the Office of Education) and its education related programs of Upward Bound, Job Corps, Neighborhood Youth Corps, and Head Start. In 1965 there came the Elementary and

Secondary Act, providing massive financial assistance to local schools for "compensatory education" to expand and improve their educational programs for deprived students.

The concept of equality of opportunity was shifting from that of providing equal inputs (e.g. teachers, facilities) to that of obtaining equal results, which required compensating for earlier learning deprivations by providing *extra* inputs for some groups. The legitimacy of this change was documented by Coleman (1966) and others in their landmark study, *Equality of Educational Opportunity.*

The Coleman Study, as it came to be known, was mandated by the Civil Rights Act of 1964 (cited in Coleman, 1966) with a charge:

> The Commissioner shall conduct a survey and make a report to the President and the Congress, within two years of the enactment of this title, concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion or national origin in public educational institutions at all levels in the United States, its territories and possessions, and the District of Columbia. (p. iii)

Six racial groups were given attention: Negroes, American Indians, Oriental Americans, Puerto Ricans, Mexican Americans, and Whites. The four major study or "topics" were: (a) the extent to which racial and ethnic groups are segregated in public schools, (b) whether the schools offer good educational opportunities, (c) how much the students learn in terms of standardized achievement tests, and (d) possible relationships between students' achievement and the kind of schools they attend. Study design involved a large survey of 4,000 public schools and 645,000 questionnaires (575,000 students, 68,000 teachers, and 4,000 principals) and a series of sub-studies at a total cost of three million dollars. No recommendations were made, but the study findings in response to each of the four basic questions were: (a) segregation in public schools—"the great majority of American children attend schools that are segregated" (Coleman, 1966, p. 3); using the "yardstick" held by the 1954 U.S. Supreme Court decision that separate schools for Negroes are inherently unequal, "American public education remains largely unequal in most regions of the country" (Coleman, 1966, p. 3); (b) schools and their characteristics—Negro pupils attend schools with poorer facilities, lower quality programs, less qualified principals and teachers and a student body composed/drawn from a more restricted and lower socio-economic group; (c) achievement of schools—most minority group pupils scored distinctly below white pupils at same grade level; gap in scores widened between grade one and twelve; (d) relation of achievement to school characteristics—after controlling for socio-economic status, differences in schools account for only a small fraction of difference in pupil achievement; within this small effect by schools, improving the schools of minority pupils will raise achievement more than for whites; factors with strongest effects were quality of teachers and the educational background and aspirations of other students in the school. It is this latter finding which drew most attention—that differences in school achievement was largely not tied to school inputs but rather the socio-economic status of the students with whom poor children attended school. Racial and social class integration was implied as the most viable solution to assisting the young to escape poverty.

In the face of these findings and the call for action by minority groups, Church and Sedlock (1976, pp. 754-768) classify educator's responses during this period, in seeking to keep their promise of helping to eliminate poverty in these categories: (a) compensatory education; (b) making the school curriculum more relevant to ghetto children (e.g., English as second language, black studies); (c) recruiting teachers from backgrounds similar to children having difficulty; (d) integration requirements (i.e., establishing an artificial condition of racial mixture which did not exist naturally, through, for example, busing); and (e) movement for community control of school (e.g., decentralization, model cities). The major evaluation of these efforts implied that these *new* school efforts did not substantially reverse the effects of poverty, even though they had some effects. By the early 1970s there was a mounting sense of frustration and defeatism among educators and disappointment and anger among parents and taxpayers. With this frustration and disappointment came such varied responses as *quick fixes* like *performance contracting*, excuses like entertaining Jensen's (1969) work on the inherently inferior learning capacity of blacks or Jenck's (1972) idea of the importance of *luck* and need for more direct solution by income transfer, and last, the widespread call for evaluation, accountability, and eventually, *back to the basics*. Citizens were becoming more distrustful of government during this time of the Vietnam War and Watergate.

In 1970, Silberman's *Crisis in the Classroom*, a study financed by the Carnegie Corporation, was published. It called for humanizing of the school to make it more interesting and exciting; terms such as *the open school*, *open classrooms*, and *learning center* were introduced to the educational scene. Silberman suggested allowing more freedom in the schools by reducing the number of required courses, allowing more independent study, encouraging offering more electives, and permitting the fulfillment of some course requirements outside of the classroom (Silberman, 1970).

But, later in the 1970s, the message communicated by national study commissions was beginning to change, particularly regarding comprehensive high schools. In 1973, the National Commission on the Reform of Secondary Education established by the Kettering Foundation described a future context for high schools consisting of an end to extraordinary expansion of facilities and student numbers (with the passing of the baby boom), a surplus of teachers, completion of a decade (the 60s) of innovation with little results, and high schools in crisis because of decreasing attendance rates, declining achievement in urban schools, and increased crime in the schools. A major change recommended by the Commission was that "recognition be given to a wide variety of available alternatives" to the traditional high school (National Commission on the Reform of Secondary Education, 1973, p. 11). These alternatives, which included art museums, studios, job apprenticeship programs, libraries, zoos and so forth, "offer a number of avenues by which learners may pursue secondary education based upon individual interests and objectives" (p. 11). The Commission concluded that these alternative paths to the diploma may mean that only about seventy percent of the student population would graduate from conventional comprehensive high schools. Some later cautioned that this would mean a shift from the ideals of the comprehensive high school to that of specialized schools (Tanner, 1982).

The commission's assessment of reality in the high school at that time was that, "The American comprehensive high school today must be viewed as an establishment striving to meet the complex demands of a society in the times of social change, at a time when the school system has become too large as an institution and is literally overrun with a mix of young people from inconsistent social backgrounds" (National Commission on the Reform of Secondary Education, 1973, p. 10). The Commission made thirty-two recommendations with the following headings: "Defining School Expectations," "Community Participation in Determining Secondary School Expectations," "Basis for Curricular Revision" (no longer to perform a custodial function), "Teacher Training," "Bias in Textbooks" (ethnic groups and women), "Bias in Counseling," "Affirmative Action," "Expanding Career Opportunities," (wider range of occupations), "Career Education," "Job Placement" (employment office in school), "Global Education," "Alternative Paths to High School Completion," "Local Board Responsibilities for Funding Alternatives," "Credit for

Experience" (outside of school), "Secondary Level Examination Program," "Broadcast Television," "Classroom Use of Broadcast Materials," "Cable Television," "Flexibility of Alternative Programs" (move away from Carnegie Unit), "Rank in Class" (no longer use), "Planning for School Security," "Records of Violence," "Code of Student Rights and Obligations," "School Newspapers, Right of Privacy" (for student records), "Corporal Punishment" (outlaw), "Student Activities" (available to all), "Compulsory Attendance" (drop school leaving age to fourteen), "Free K-14 Public Education" (last six years available to use anytime in life), "Youth Organizations," "Sexism" (eliminate), and "Females in Competitive Team Sports" (equal opportunity) (National Commission on the Reform of Secondary Education, 1973).

Also in 1974, the Panel on Youth of the President's Science Advisory Committee, chaired by James Coleman, issued its report entitled *Youth: Transition to Adulthood.* Coleman (1974) introduces the report with the statement, "As the labor of children has become unnecessary to society, school has been extended for them. With every decade, the length of schooling has increased, until a thoughtful person must ask whether society can conceive of no other way for youth to come into adulthood" (p. xiii). He further suggests that schools have expanded to fill the time once occupied by other activities (such as work) which provided young persons, "opportunities for responsible action, situations in which one came to have authority over matters that affected other persons, occasions in which he experienced the consequences of his own actions, and was strengthened by facing them—in short, all that is implied by `becoming adult' in matters other than gaining cognitive skills" (p. xiii).

The report summary begins by concluding that the dominant institutions for youth at present are high schools and colleges. The panel's recommendations are set within a premise that it is time for society's treatment of youth to include school but neither be defined nor limited to it; further, that this broader environment in which youth make a transition to adulthood have two sets of objectives, "self-centered objectives of acquiring skills and knowledge; and objectives relating to responsibilities affecting other persons" (p. xv).

Recommendations for change are in the form of pilot programs, which can be expanded after testing. The recommendations include: (a) development of more specialized high schools as distinct from comprehensive ones and reduction in size of schools—also encouragement of students teaching younger children and schools placing youth in settings outside the school concurrent with continued schooling; (b) encouragement of mixture of part time work and part time school; (c) more intimate intermixture of school and work carried out at the workplace; (d) federal government to serve as paying customer for youth organizations to give financial base and purpose and for set up of youth communities where they provide services and have responsibility; (e) review of protection regulations for workers under 18 (with purpose of relaxing them) and development of a dual minimum wage (lower for young workers); (f) introduction of broadly-usable educational vouchers from age sixteen equivalent to value of cost of four years of college (use any time); (g) a wider range of opportunities for public service by youth; and (h) a series of questions requiring further research (e.g., cost and returns of part-time work to academic achievement, benefits and costs of interrupted schooling) (Panel on Youth of the President's Science Advisory Committee, 1974).

In support for its recommendation for more specialized schools, the Panel on Youth states:

> This proposal goes directly against the trends in American education toward comprehensive schools. The specialized schools of the past were eliminated in one community after another.... Comprehensive schools seemed to have advantages of mixing students, allowing easy transfer from one curriculum to another, and in general, providing a democratic equality of opportunity and treatment. But these supposed advantages have been negated in many locales. Comprehensive schools drawing from black lower class neighborhoods or white upper middle class areas are very different. By specializing overtly in student body, they specialize covertly in curriculum. The comprehensive school becomes a narrow school, vainly trying to be like others, but passively specializing around neighborhood input. (p. 153)

Where the advantages have been lost, the panel recommends a move to specialized schools, which have the advantage of allowing

> greater encouragement of intense concentration on an activity. . . . Specialized schools have a clearer mission, they can build organizational competence and identity around their more restricted focus, and they can attract students and faculty of appropriate and mutually-reinforcing interest. For example, they can concentrate on excellence in music, arts, performing arts, science, humanistic studies or different industry sectors . . . . And there are other advantages. A school specializing in one major area of study can draw students from a larger geographic area, helping to attenuate the existing specialization by narrowing geographic base that commits all neighborhood youth to the one public school. Such a school can set

> admission policies that encourage representatives from various social groups. (p. 153)

In 1976, the National Panel on High Schools and Adolescent Education established by the U.S. Office of Education issued a report entitled *The Education of Adolescents*. In the introduction, the chairperson states, "An essential feature of the report... is the conviction that the high school has become over burdened and should share its responsibilities for youth with other agencies in the community, so that instruction and educational experiences can be provided both in the school and outside the school in the community itself" (p. viii). The panel begins its report with a series of observations that serve as context and rationale for its recommendations. The observations recognize the monumental task of providing universal schooling for all adolescents, the increasing separation of teenagers from adults, younger age of onset of puberty, a heterogeneity of adolescence that is greater than present high school can encompass, lack of sufficient education for citizenship, high public support for vocational education, increasing responsibility given to school for education and redress of society's ills, and need for managers of change in governance of schools. The panel suggests these observations can best be summarized by seeing them

> as leading to a call for comprehensive education through complimentary arrangements and linkages among many organizations *including* schools. The panel would shift the emphasis away from the *comprehensive school* toward *comprehensive education*, arguing that the confines of one building are no longer enough to contain all the valuable and necessary experiences for today's young person. (p. 8)

Major recommendations of the panel were: (a) the unattainable practice and inadequate concept of the comprehensive high school be replaced with the more practical goal of providing comprehensive education through a variety of means including the schools; (b) inaugurate *participatory education* for joint participation of adolescents and interested and qualified adults, especially in the areas of education in the arts, vocational education and education in the operation of government; (c) establishment of small, flexible, short-term part-time schools; (d) reduce compulsory daily attendance from all-day sessions to an academic day of two to four hours; (e) reemphasize the basic role of the high school as education of the intellect; (f) establish community guidance centers; (g) test these recommendations on small scale with careful monitoring; (h) recognize importance of adult and adolescent participation in educational change; (i) federally sponsored research; (j) federal support and state review of these changes; (k) establish operational planning teams at local level.

Completing the 1970s, the Carnegie Council on Policy Studies in Higher Education published its report entitled *Giving Youth A Better Chance* in 1979. The major concerns of the study group were: (a) reducing dropouts and absenteeism in high school, (b) improving basic skills of high school graduates, (c) giving high school students an opportunity to develop useful work habits, (d) reducing the alienating aspects of the high school experience, (e) easing the transaction from high school to the labor market, (f) improving the paths into higher education, (g) improving the paths into military service, and (h) creating many more opportunities for other forms of service by youth (p. 15).

Starting with a general recommendation that the age of free choice to leave school be made age sixteen, other high priority recommendations were grouped into categories of the high school, post secondary, labor market, service, and community. Referring only to those specifically focused on the high school, the recommendations included: (a) change the basic structure of high schools by making them smaller or by creating diversity within them or both, by creating full-time specialty schools, by creating part-time specialty schools, and by providing one or two days a week for education-related work and/or service; (b) create work and service opportunities for students through the facilities of the high school; (c) stop the tracking of students (all individualized programs); (d) put applied skills training in private shops (with the exception of clerical skills and home economics), when not moved to post secondary level (basic vocational skills for high school are skills in literacy and numeracy and good work habits); (e) finance needy students through work study programs and more effective job placement; (f) create job preparation and placement centers in high school (follow students for two years after their leaving school); (g) improve capacity to teach basic skills through more federal funding; (h) encourage earlier entry from high school into college; and (i) experiment with vouchers and greater freedom of choice in public schools.

1980- : Return to Basics/Excellence

Perhaps it would be best to begin this section with review of a very critical response to the critique of comprehensive high schools evident in the four national studies just reviewed in the previous section. Such a response was provided by Daniel Tanner in *Educational Leadership* (1982). First, he reminded readers of the observations of Dewey in 1915 and the Commission on the Reorganization of Secondary Education in 1918 concerning splitting the secondary school system. Dewey (cited in Tanner, 1982) gave this advice:

> The segregation proposed is to divide the children of the more well-to-do and cultured families of the community from those children who will presumably earn their living by working for wages in manual and commercial employment.... Many of us have been disturbed at the increasing tendency toward stratification of classes in this country. We have wondered if those European prophets were correct who have insistently foretold that the development of fixed classes in this country was only a question of time. Few would have dreamed that the day was already at hand when responsible and influential persons would urge that the public school system should recognize the separation as an accomplished fact, and adapt to its machinery of administrative control its courses of study, and its methods of instruction in public schools. (p. 610)

The Commission on Reorganization, (cited in Tanner, 1982) stated:

> The comprehensive high school embracing all curriculums in one unified organization, should remain the standard type of secondary school in the United States... the comprehensive school is the prototype of a democracy in which various groups must have a degree of self-consciousness as groups and yet be federated into a larger whole through the recognition of common interests and ideals. (p. 611)

From here, Tanner makes his most provocative remarks:

> Where the 1918 commission envisioned the serving of all youth in our high schools as an opportunity and responsibility, the contemporary commissions and panels choose to see it as a `burden.' Where the 1918 Commission viewed our societal strength as derived from unity through diversity, the contemporary commissions and panels choose to see such diversity only in terms of incompatibility and conflict. Where the 1918 commission looked to youth as the rising generation in whose hands would be the future of the nation, the contemporary commissions and panels portray this generation as the "youth problem." Where the 1918 commission recognized the unique and democratizing function of public secondary education, the contemporary commissions and panels favor the surrender of the public interest to the private interests of business, industry, and the media. (Tanner, 1982, p. 611)

In the same vein as the later 1970s, the 1980s were also fortunate or vexed, depending on how you look at it, with yet more national studies focusing on educational reform with implications for comprehensive high schools. Three of these studies issued early reports in the 1980s.

In 1982, a group of scholars known as the Paideia Group, funded by the MacArthur Foundation and chaired by Mortimer Adler, published its report entitled *The Paideia Proposal, An Educational Manifesto*. (*Paideia* refers to the general learning that should be the possession of all human beings). Again drawing on the thoughts of Dewey and also Horace Mann, Adler states:

> The Democratic promise of equal educational opportunity, half fulfilled, is worse than a promise broken. It is an ideal betrayed. Equality of educational opportunity is not, in fact, provided if it means no more than taking all children into the public schools for the same number of hours, days, and years. If once they are divided into the sheep and the goats, into those destined solely for toil and those destined for economic and political leadership and for a quality of life to which all should have access, then the democratic purpose has been undermined by an inadequate system of public schooling . . . . It fails because it has achieved only the same quantity of public schooling, not the same quality . . . . We should . . . be an educationally classless society. (Adler, 1982, p. 5)

For the Paideia Group, true equality of educational conditions is when every student gets the same quality education; in the words of Robert Hutchins, "The best education for the best is the best education for all" (Hutchins as cited in Adler, 1982, p. 6). They propose a one track system of public schools that has the same objectives for all youth: "to earn a living in an intelligent and responsible fashion, to function as intelligent and responsible citizens and to make both of these things serve the purpose of leading intelligent and responsible lives—to enjoy as fully as possible all the goods that make a human life as good as it can be" (Adler, 1982, p. 18). To achieve these goals, education, according to them, must be general and liberal (nonspecialized and nonvocational) for the first twelve years. Vocational education, in the sense of preparing for particular jobs, is designated as something educators turned to for the "portion of the school population which they incorrectly and unjustly appraised as being uneducable—only trainable" (p. 19). Twelve years of general, unspecialized schooling is suggested to be the best preparation for work. In keeping with the notion of equality of education for all, the Group recommends a common curriculum, with all courses required by all (except choice of a second language) and no electives.

In 1983, President Reagan's National Commission on Excellence in Education issued its report, largely focused on the high school, entitled *A Nation at Risk: The Imperative for Educational Reform.* The commission introduced its report with:

> Our nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world . . . the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people . . . . If an unfriendly power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war . . . . We have been committing an act of unthinking, unilateral educational disarmament. Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of the high expectations and disciplined effort needed to attain them. (pp. 5-6)

The commission recommended a renewed commitment to excellence in education, which means individuals performing at the boundaries of their abilities, and schools setting high expectations. However, the Commission believed that commitment to excellence does *not* have to be at the expense of a strong commitment to the equitable treatment of diverse populations. "The twin goals of equity and high-quality schooling have profound and practical meaning for our economy and society, and we cannot permit one to yield to the other either in principle or in practice" (p. 13).

Findings and recommendations of the commission are categorized in the areas of content, expectations, time, and teaching. Regarding content, one of the commission's findings was that secondary school curriculums have become "homogenized, diluted, and diffuse to the point that they no longer have a central purpose. In effect, we have a cafeteria style curriculum in which the appetizers and desserts can easily be mistaken for the main courses. Students have migrated from vocational and college preparatory programs to `general track' courses in large numbers" (p. 18). Recommendations of the commission addressed the following: (a) strengthening of high school graduation requirements (particularly five *new* basics—English, mathematics, science, social studies, and computer science; foreign language for college bound); (b) raising of expectations for academic performance and conduct in schools and admission standards for college; (c) spending more time on new basics (e.g., more effective use of school day, longer school day, lengthened school year); (d) improve preparation of teachers and make teaching a more rewarding and respected profession (e.g., increase salaries, longer contracts, provision for master teachers); (e) holding educators and elected officials responsible for these changes, and having citizens provide fiscal support and stability to bring about these changes.

Within days after the release of *A Nation at Risk*, the Twentieth Century Fund-sponsored report of its Task Force on Federal Elementary and Secondary Education Policy was released (in preliminary form). Again there was concern about too many young people leaving school without essential learning skills and without self discipline and purpose.

The Task Force called for national commitment to excellence in public schools and, at a minimum, provision of the same core curriculum components to all students. The core components are, "basic skills in reading, writing, and calculating; technical capability in computers; training in science and foreign languages; and knowledge of civics" (Twentieth Century Fund Task Force on Federal Elementary and Secondary Education Policy, 1983, p. 1). They concluded that, "In essence, the skills that were once possessed by only a few must now be held by the many if the United States is to remain competitive in an advancing technological world" (p. 2) and that "equality and excellence are not mutually exclusive objectives" (p. 4). What is needed is a *fresh approach* by the federal government, which "reflects the national concern for a better educated America and that strikes a reasonable and effective balance between quality and equality" (p. 5).

Recommendations of the Task Force addressed: (a) federal government to emphasize need for better schools and better education for all young Americans; (b) establishment of Master Teachers Programs to recognize teaching excellence; (c) recognize that most important objectives of elementary and secondary school is development of literacy in the English language; (d) emphasize programs to develop basic scientific literacy among all citizens and advanced training in science and mathematics for secondary school students; (e) continued federal efforts to provide special educational programs for the poor and for the handicapped; (f) categorical programs required by the federal government should be paid for from the federal treasury; (g) "impacted" aid be extended to not only children of military personnel but of immigrants; (h) federal support for educational research efforts (e.g., factual information collection, evaluation of programs, research) into the learning process; (i) establishment of special federal fellowships for school districts to encourage creation of small, individualized programs staffed by certified teachers and run as small-scale academies (for students who need special learning environments). But, this was not the end of national studies of education for the 1980s!

Selected Characteristics of Comprehensive High School Development

The aim of this section is to analyze and summarize the preceding brief (and also selected) descriptions of the development of the comprehensive high school in the United States. The analysis is limited by the extent and depth of the review of historic documents and their interpretations. The characteristics selected for examination through history were: (a) growth in size of population served, (b) definition of comprehensive high school, (c) purpose of secondary education, (d) recommended curriculum, (e) recommended methods of instruction, (f) important issues debated, and (g) source of leadership on national commissions and studies. These characteristics are summarized in Table L.1 for the time periods addressed in the previous historical descriptions. What follows is a brief discussion of each characteristic over the 200+ year time span.

Growth in Size of Population Served

At the time the first high school was established (at least by name) in Boston in 1824 most of what would now be considered as secondary education was taking place in academies—there were some six thousand academies in 1850 scattered across the country. However, things began to change, and by 1860 there were three hundred high schools, and six thousand by 1890. They were destined to become the standard form of providing post-elementary and pre-college public education in the United States. From 1900 to 1940, the number of students enrolled in high schools about doubled every ten years; from 1940 to 1980, it doubled again. Consider the press for teachers, facilities and curriculum materials with that expansion rate—from 700,000 students in 1900, to 7,000,000 in 1940, to 14,000,000 in 1980. The continuity of this growth is a remarkable achievement in light of the critical events in United States history also taking place during these times. Part of the increase was caused by serving a larger percent of the eligible age group—from eleven percent in 1900 to seventy-three percent in 1940 and up to ninety-nine percent in 1980. In 1910 the high school had an elite clientele, while in 1980 it was serving the masses. It is little wonder that the high school came to be known as comprehensive and that it was the focus of several major national studies.

Table L.1
Summary of Selected Characteristics of Comprehensive High School Development in the United States

Characteristic	1600-1890	1890-1920	1920-1940	1940-1960	1960-1980	1980-
Some critical events (1)	1620: Plymouth Colony 1647: First public school system (MA) 1776: Declaration of Independence 1803: Louisiana purchase 1848: Gain Western territory from Mexico 1862: Civil War starts 1886: American Federation of Labor founded	1913: Federal income tax 1914: World War I starts 1917-18: U.S. in WWI 1920: Majority of population in urban areas 1920: Prohibition	1925: Scopes trials 1927: Lindberg's flight 1929: Stock market crash 1933: Roosevelt's New Deal	1941-45: U.S. in World War II 1945: Hiroshima 1947: Truman Doctrine 1950s: Televisions 1950-53: Korean War 1957: Sputnik	1961: First U.S. astronaut in space 1962: Cuban missile crisis 1964: Civil rights legislation 1965-73: U.S. in Vietnam War 1968: Watts riots 1969: Moon landing 1974: Watergate 1978: Proposition 13 1979: Iranians take hostages	1981: Columbia space flight 1982: Reagan's new federalism
Central theme	Getting started	Basic reform/social efficiency	Reorientation/being progressive	Reaction subject centering	Relevance/equity	Return to basics/ excellence
Size of population served (2)	1889-90: 359,949 (6.7% of age group)	1899-1900: 699,403 (11.4% of age group) 1909-1910: 1,115,398 (15.4% of age group) 1919-1920: 2,500,176 (32.3% of age group)	1929-1930: 4,804,255 (51.4% of age group) 1939-1940: 7,123,009 (73.3% of age group)	1949-1950: (76.8% of age group) 1959-1960: 9,590,000 (87.3% of age group)	1969-1970: 14,422,000 (92.7% of age group) 1979-1980: 16,327,000 (99.6% of age group) (Projected)	

Table 1 continued

Characteristic	1600-1890	1890-1920	1920-1940	1940-1960	1960-1980	1980-
Definition		Embraced all curriculum in one unified organization (3) Earlier called composite or cosmopolitan high school		Aims to serve needs of all youth; does not select; teaches all varieties of skills and knowledge to all kinds of youth; prepares for successful vocations (4) An American phenomenon; one administration and one roof; for all youth of one town or neighborhood; provides good and appropriate education, both academic and vocational, in a democratic environment (5) Prepare for citizenship and immediate work or college; distinguishes widely and narrowly comprehensive using 21 characteristics (6)		

Table 1 continued

Characteristic	1600-1890	1890-1920	1920-1940	1940-1960	1960-1980	1980-
Purpose of secondary education	1600s: Prepare selected boys for college and read Bible (grammar school) 1750s: Prepare for success in life and business (academy) 1800s: Bridge from elementary school to college (high school)	1892: Prepare for life (same as prepare for college [7]) 1913: Preserve, promote and refine the way of life in democracy (10) 1935: Provide equal educational opportunity (12)	1932: Prepare for social change but not reconstruction (9) 1930: Preserve, promote and refine the way of life in democracy (10) 1935: Provide equal educational opportunity (11, 12)	1947: Equip to live in a democratic society; high school as custodian for all youth (13) 1950s: Assist in competition with communist countries in science and national defense(14) 1954: Prevent rigid social class barriers (14, 15) 1959: Search for intellectual talent among youth; provide general education for all and skills for immediate work or college education (15)	1960s: Break poverty cycle; compensate for differences in earlier opportunity (16) 1970s: Has too many purposes—overburdened; move to more specialized work, involve other institutions in providing education (17, 18, 19, 20)	Provide excellent education in basics (21, 22, 23) Keep nation technical advanced (22, 23)
Curriculum	Grammar school — classical (Latin, Greek, Bible) Academy — English, modern language, science, classics High school — English, mathematics, history, science	Similar to college (7) Basic plus limited electives; opened curriculum to modern subjects (7) Vocational education as visible addition; differential education; constants and variables (8)	Differentiation appropriate — how soon, how much (9) Flexibility to local level (10)	General curriculum in addition to vocational and college preparatory (13) Emphasis to subject matter, particularly science and mathematics (6)	Criteria for widely comprehensive school developed (15) Electives important together with counseling (15) Shift to learner as concern (18, 19, 20) More freedom in choice (18, 19, 20) Include public service (18, 19, 20) Reduce age of leaving (20)	New basics — science, mathematics, English, social studies and computer science (and foreign language for college bound) (22, 23)

Table 1 continued

Characteristic	1600-1890	1890-1920	1920-1940	1940-1960	1960-1980	1980-
Instruction	Grammar school — stern learning environment	Train power of observation, memory, expression and reasoning (7) Make relevant to life (8)	Student more active (9, 10) Concern for relevance to student (9, 10)	Return to mental discipline (14, 6) Discovery method of scientist (6)	Link to adults and community (18, 19, 20) Humanize school (15) Alternative learning places to school (17, 18, 19, 20) More independent study (18, 19, 20)	Better use of school time (22) Higher expectations for students (22, 23)
Issues	- Able to read and understand Bible - Getting education for children (male) of elite - Suit needs of western expansion - Obtaining skilled workers for industry - Education as state and local responsibility - Using public resources for education	- Relation to college - Degree of differentiation in student programs - Relative emphasis on classics versus modern subjects - High school for the masses? - Useful to real life - Social efficiency - Context of democracy - Vocational guidance	- High school as custodian - Less bright students - Role in Social reconstruction - No clear purpose - Appreciation for heritage - Responsibility to community - Challenge to gifted - Knowing student - Conditions for learning - Developing creative talents - Relevant to youth concerns - English - Continuity in programs - Finding employment - Equal opportunity	- Dealing with baby boom - Seeming failure of progressivism - Handling marginal students - Education as aimless - Critique of schools and education professions - Turn to subject matter specialists - School as meritocracy - Use of research and development - Separate but equal not adequate - Specialized versus comprehensive high school	- Diversity in schools - Ability grouping and tracking - Marketable skills - Community control - Accountability - Open school - End to expansion - Declining attendance rates - How much to promise - Clearer mission - Diversity in students - Developing positive attitude - Vouchers - Equality of results	- Excellence - Mediocrity in school - Merit pay for teachers - Retaining equity - More time for school - Holding school responsible - Master teachers

Table 1 continued

Characteristic	1600-1890	1890-1920	1920-1940	1940-1960	1960-1980	1980-
Membership of national commissions studies		Higher education (7) Secondary school administrators and teachers (8)	Secondary school administrators and university professors	Wide variety (13, 14) University (6, 16)	Education profession	Higher education, business and industry, federal policymakers

Sources:

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2. Tanner, D. *Secondary Education: Perspectives and Prospects.*
3. Commission on the Reorganization of Secondary School.
4. Keller, F. J. *The Comprehensive High School.*
5. Conant, J. B. *The American High School Today* (citing John Gardner)
6. Conant, J, B. *The American High School Today.*
7. Committee on Secondary School Studies
8. Commission on Reorganization of Secondary Education.
9. Committee on Reorientation of Secondary Education.
10. Commission on Relation of School and College.
11. American Youth Commission Survey.
12. Education Policies Commission.
13. Commission on Life Adjustment Education.
14. Committee for the White House Conference on Education. *Report to the President.*
15. Conant, J. *The Comprehensive High School.*
16. Coleman, J. *Equality of Education Opportunity.*
17. National Commission on Reform of Secondary Education.
18. Panel on Youth of the President's Science Advisory Committee. *Youth: Transition to Adulthood.*
19. National Panel on High Schools and Adolescent Education. *The Education of Adolescents.*
20. Carnegie Council on Policy Studies in Education. *Giving Youth a Better Chance.*
21. Adler, M. J. *The Paideia Proposal: An Educational Manifesto.*
22. National Commission on Excellence in Education.
23. Twentieth Century Fund Task Force on Elementary and Secondary Education Policy. *A Nation at Risk.*

Definition of Comprehensive High School

The first use found of the term *comprehensive* in reference to the high school was by the Commission on Reorganization of Secondary Education, appointed in 1913 by the National Education Association. It was used in reference to a high school that embraced all curriculum in one unified organization. Earlier, the terms *composite* and *cosmopolitan* seem to have had a similar meaning. The term *comprehensive* was coined at a time when there was a reaction to the: (a) large influence of higher education over the high school curriculum; (b) concern for the usefulness of the curriculum to real life for most students; (c) desire that secondary education become part of the common education for everyone; and (d) fact that vocational education was a visible concern to high school (because of need for trained workers, high dropout rates, meeting needs of less bright students and the wish to make a clearer link of high school to preparation for life). It was also a time when vocational education was growing rapidly, but in separate institutions, and a time (the only) when a national commission was largely made up of educational professionals and chaired by a vocational educator (Kingsley). Along with the term *comprehensive* came the terms *constants*, *variables*, and *electives* in reference to specific courses or subjects. Vocational education was categorized among the variables, although preparation for vocation was one of seven cardinal principles identified to direct secondary education.

Later in the 1950s, John Gardner and James Conant would revisit the definition of a comprehensive high school, suggesting it was to essentially serve all youth from a given geographic area under one roof (or series of roofs) and one administration. It was characterized as a particularly American phenomenon in contrast to European educational systems with their specialized secondary schools. Although the issue of comprehensive versus specialized schools surfaced for debate several times, the comprehensive high school always retained support. Perhaps the decision was really made back in 1913 and major change after that time would have been difficult to achieve given the high schools already in place.

Interestingly, the major criticism of the 1913 Commission Report came from David Snedden, who maintained that only imitation (and not real) vocational education could occur in a comprehensive high school. Conant (1959) rationalized the comprehensive high school by its better fit to a democratic society giving equal status to people and jobs and the need for youth to mix while learning. Another purpose voiced not quite so loudly was that the comprehensive high school best served Conant's idea of the high school as a meritocracy, allowing the widest possible pool of youth from which to sort out intellectual talent. Keller (1955), studying the comprehensive high school at this time, raised the issue about whether a democracy requires uniformity or sameness in high school organization and available curriculum—that there is nothing undemocratic about diversity. He reasoned that effective and efficient occupational preparation requires the class time, teaching expertise and extensive facilities made possible by specialization in schools.

Purpose of Comprehensive High School

In some ways it is being simple-minded to attempt to capture and characterize the change in purpose as well as other features of secondary education in one chart embellished by a few paragraphs of discussion. Rather, what is done here is to highlight the aspects of purpose reflected in the national studies and commission reports, assuming they relate to then-present school practices and hopes for the future. Early in the development of the high school, and for that reason perhaps most influential in its continuing purpose and organization, the purpose of the high school was to prepare a relatively small elite group of students for efficient entry into higher education.

Through the 1950s, a major purpose of several of the national study commissions was to review ways to better articulate the relation between high school and college, with the high school assumed to be the institution needing to change. While the purpose of preparing a select group of students for college came under criticism, it always seems to remain a very high priority in the discussion and recommendations concerning the purposes of the high school. Early in the high school development (1890s), the issue of preparation for college was handled by recommending that the high school focus on preparation for life; however, the best preparation for life was assumed to be the best preparation for college—this was when high schools were serving a very select group of students.

Later, as the high school needed to serve a much larger group of students (some not so oriented or endowed with ability for intellectual scholarship), and as the need for a trained labor force increased, the overall purpose remained preparation for life. But within this broad mission statement, the purpose was differentiated to be to provide some advanced (beyond elementary) general or common education, and also either preparation for college or for immediate entry to work.

In the 1930s the issue of education's role in social reconstruction was especially debated. Resolution seemed to be that education should play a role in preparing the young for social change but should appropriately leave reconstruction to the larger democratic process. Also starting during this time was concern for assuring equal educational opportunity in the purpose of public education. Each generation was to have a fair and fresh start in the competition for benefits of our society. Schools were to play a major role in the reshuffling process, and later, in the 1960s, with actually compensating for earlier educational deprivations for certain groups.

In the 1950s, with the advent of the Cold War and Sputnik, education was recognized for its role in assuring *national purpose*—national defense and technical superiority. The federal government began to take more initiative (particularly as evidenced in federal expenditures) in curriculum reform, especially as related to mathematics and science. In the 1960s, federal interest turned to the role of education in the War on Poverty. The purpose of education at this time was becoming all encompassing—the criticism soon became that education was aimless and not doing a very good job of anything. It was suggested that the high school begin to restrict its purpose as a means to focus energy and resources and thereby demonstrate effects; discussion distinguished the comprehensive high school from comprehensive education—the latter involving many other community institutions besides the school.

Curriculum of Comprehensive High School

Again, the basic organization and importance associated with various subjects of the curriculum in the high school appears to have been decided very early. The illustrative student programs recommended by the Committee of Secondary School Studies appointed in 1892 are strikingly like those recommended by the high school studies of 1983—all of the basics are there in English, mathematics, science, social studies, and foreign language (only computers were missing in 1892 and classical languages have been replaced by the modern); electives were permitted but there was very little time remaining for them and they were not central to the curriculum. More of the flexibility was in the amount of time balance between the basic subjects, particularly the focus on foreign languages.

A major difference was that in 1892, the criticism of the recommendations came from those teaching the classics who had lost time to the *modern* subjects of science, history, and geography and modern languages. In 1980, the criticism seems to have come from those teaching the electives (such as vocational education) who are losing time to the *new basics*. Another major difference was that in 1892, the public high schools enrolled about 500,000 students (6.7 percent of age group) while in 1980, enrollment was 16.3 million (99 percent of age group).

Between these two points in time the curriculum of the high school seemed to move in waves, altering between more electives and flexibility in curriculum and student programs and constrictions with re-emphasis on certain aspects of the curriculum. For example, the *life adjustment education* movement in the late 1940s resulted in the addition of the general education track to the curriculum (along with college preparatory and vocational)—thereby adding electives and flexibility. However, with Sputnik in the late 1950s, there was a shift to emphasis on science and mathematics with revised curriculum materials constructed by subject matter specialists (rather than educators) and an increase in high school graduation requirements in these areas. Following in the 1960s was the concern for lack of relevance in the school curriculum and the inequality in educational opportunity across schools in different areas. The result was more focus on the learner and learning problems, return to the education profession as a source of curriculum, and an increase in electives and flexibility in student programs to meet individual needs. Perhaps the reports of the early 1980s are simply a *turn of the wheel* to more focus and prescription as a response to being overly flexible and its consequences.

Methods of Instruction in the Comprehensive High School

The cycling—which seems apparent in the curriculum—also appears evident in methods of instruction, from the stern learning environment of the grammar school, which seems to have been carried into the early high schools, to emphasis on students' problems and having the student active (progressive movement—1920s and 30s), to a *return* to mental discipline (1940s) in combination with discovery methods of science (new math and physics—1950s and 60s), to attempts to humanize and *open* the school (1970s), to higher expectations and again more discipline and rigor (1980s). Perhaps an optimistic view is that we are still in search of the best method or combination of methods for instruction in the comprehensive high school.

Issues Concerning the Comprehensive High School

It is not too difficult to summarize the issues addressed by the various national commissions and studies of the comprehensive high school over time—in many ways they have remained the same, with a few added or subtracted or only a change in emphasis. These issues can be categorized under the following headings:

1. What should be the purpose (e.g., all youth or a select few, social efficiency, social reconstruction, sorting of intellectual ability, general or specific education, equalizing opportunity, insuring national security)?

2. What curriculum best follows from the purpose (e.g., common or differentiated, classics or modern subjects, academic or vocational, essential or relevant, constants or electives, continuity or flexibility, gifted or special, educator or subject matter specialist, community or state responsibility, diversity or focus, school or community)?

3. What instructional methods are best used to teach the curriculum for the intended purpose (e.g., teacher as source of knowledge or guide, degree of needed knowledge about student by teacher, conditions for learning, developing creative talents, handling diversity of students, *opening up* the school, use of community, best use of time, assuring vigor and results)? and

4. How should the high school be organized (e.g., specialized or comprehensive facilities, local or state and federal governance, education of teachers and administrators, role of support services such as guidance and special education, segregated or integrated schools, reward system for teachers)?

What *has* changed over time was the *responses* to these issues. These changes have already been described in the above sections of this report.

Source of Leadership in Resolving Issues

One of the factors that may have influenced how the above cited issues relating to secondary education were resolved was who was asked. That is, what interests were represented on the national commissions and studies reviewed in this paper? Although it is difficult in some cases to ascertain the professional responsibilities of commission members or study staff, at least some things are known. The Committee on Secondary School Studies, which set the pattern for secondary schools in terms of purpose, course offerings, and schedule back in the 1890s, was composed of five university presidents, a college professor, a commissioner of education and three principals (the chairperson was Charles Eliot, President of Harvard). Perhaps the next most influential commission using the term *comprehensive high school*, adding vocational education to the high school curriculum, and formulating the Seven Cardinal Principles of Education, was the Commission on the Reorganization of Secondary Education, formed in 1913. In marked contrast to the earlier committee, it was chaired (and the report mostly authored) by Charles Kingsley, who had recently been a mathematics instructor at Brooklyn Manual Training High School, and membership of the commission was drawn largely from secondary schools rather than universities. Similar, but not as drastic, differences in recommendations and membership can be observed in looking across the commissions and study groups which followed.

The generalizations made here are very tentative—it is a large and risky step from knowing a person's occupation to that of what recommendations they would make about secondary education. Certainly many of the members were parents and had children who would be affected by their recommendations about the secondary school as only one reason for taking a broader perspective. A study which I have already begun is to try to gather much more information about the characteristics of commission members, both in the past and for more current groups, studying and recommending changes in the secondary school.

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APPENDIX M

The Comprehensive High School: An International Perspective

THE COMPREHENSIVE HIGH SCHOOL: AN INTERNATIONAL PERSPECTIVE

by

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THE COMPREHENSIVE HIGH SCHOOL:
AN INTERNATIONAL PERSPECTIVE

The main question of this paper is: What can we learn from the designs of high schools in other countries in order to inform future designs of comprehensive high schools in the United States? The countries included in this paper — Australia, France, Germany (former West Germany), Japan, Sweden, and Great Britain — generally are considered economically competitive with the United States. Moreover, they are all industrialized, and, like the United States, have moved from a primarily agricultural, to a manufacturing, to a service-based economy.

In light of such similarities between countries, it is assumed that it would be beneficial to examine secondary schools in these countries in order to more effectively design a comprehensive high school in the United States. The focus of investigation within the secondary school system of each country includes learner outcomes, learning process (curriculum, instruction, assessment), organization, partnerships with the community, staffing, physical facilities, and cost.

The Context of Secondary Schools

Husen (1990) discusses what seems to be a common concern in most urban, industrialized, technological societies such as the United States — the decline of the secondary school. He notes that, at a recent Organization of Economic Cooperation and Development (OECD) meeting, when the U.S. Assistant Commissioner of Education was asked about the situation of secondary schools in the United States he described it as a "disaster area" (p. 9). This has been confirmed by the U.S. Secretary of Education Lamar Alexander's call "...to reinvent the public schools because our current system is an anachronism..." (Kantrowitz and Wingert, 1991).

There are certain trends which clearly indicate a problem. Husen points out that, in the past few decades, there has been an alarming rate of vandalism, absenteeism, and turn over of teaching staff in many countries. Moreover, attitudinal surveys conducted by the International Association for the Evaluation of Education (IEA), and other groups, found that the majority of young people (ages 13-16) surveyed tended to dislike school. Much of the frustration found in the general public stems from a lack of understanding about what a secondary school is expected to achieve, and what it has actually been able to achieve.

In the United States, as in other countries, the school has been expected to serve all students through the provision of a variety of programs. Moreover, in a society where the role of the family has changed rapidly, it has been expected to make a major contribution to the social education of young people, making them cooperative, responsible, open-minded citizens who are willing to take part in the political process of a modern democratic society.

In Husen's words, it is clear that the "...discrepancy between rhetoric and reality has become strikingly large" (p. 9). The disparity between the aims and outcomes of education has led to frustration and dismay. Such frustration, however, is not confined to the United States. It can be found on a global scale. Throughout the industrialized world, there is an understanding that the school as an institution is facing difficulties that must be dealt with immediately. Yet, as Husen stresses, schools do not operate in a vacuum. It is within the context of the society at large that the problems of education must be addressed.

With this said, why should we look beyond our borders for answers? Although within the modern industrialized world an abundance of cultural, political, and economic differences exist, our young adults are increasingly faced with similar social dilemmas. The countries examined in this paper have numerous interrelated characteristics, which are linked to the advent of a service-oriented, high-technology, information society. Husen points out five prevalent features that characterize the common societal changes found in the industrialized world:

1. Urbanization: all have made transitions from agricultural, to manufacturing, to service-based economies.

2. Changes in family structure and role of family: cohabitation, increased divorce rate, and lower birth rates have resulted in smaller families throughout the industrialized world. Moreover, the majority of women now work outside the home.

3. Increased competition in the world market and world economy: national economies have become more closely linked with the global marketplace.

4. Increased value placed on formal education: formal education is increasingly viewed as the route to individual success and social mobility. Employment is based on the acquisition of adequate schooling. Thus, such societies are becoming meritocratic, requiring a higher level of individual academic achievement to compete successfully in the labor force.

5. Slowing of the absorptive capacity of the labor market is found throughout the industrialized world: changes in technology, such as automation and computerization, have led to drastic job cuts in certain fields.

Most evident is the changing role of the family as the result of such trends. Significant changes in the family structure and modes of production have taken place in modern societies. In a pre-industrial society, the family was the main unit of both production and consumption. Children quickly became productive members of the household at a young age. However, in a highly industrialized and urbanized society, a clear distinction between learning and production exists, which, Husen argues, has resulted in the following notable changes found in most modern societies:

1. Jobs have become highly specialized, with production moving outside the household to offices and factories.

2. Increasingly, both parents are working outside the home. In the last decade there has been an drastic rise in the number of working mothers.

3. The preparation period for adulthood, both as citizen and worker, has been extended. The skills and competencies required to become a responsible member of a complex society take much longer to acquire.

4. Institutions have increasingly taken over child care and child rearing. Day care and youth programs have developed, offering extended hours for working parents.

The changes noted above have shifted much of the responsibility for socialization from the family unit to established institutions such as the school. However, due to the rapidity of the changes, much of the social and welfare efforts are fragmented and highly specialized. Such changes were noted as early as 1977 at an international symposium sponsored by the European Cultural Foundation. At the symposium, which focused on issues concerning youth, education, and employment, the following conclusion was reached:

> ...there is in contemporary society a youth problem of extraordinary, unprecedented, and worsening proportions - lying beyond the reach of macro-economic, countercyclical measures and defying established institutional approaches. (Husen, 1990, p. 25)

Thus, such societal changes are apparent in varying degrees throughout the developed world. Given the similarities of the concerns facing young adults in modern, highly industrialized societies it is only fitting that we look across borders for new ideas and insights when attempting to forge solutions. Because of our common concerns, it may help us to examine, and attempt to learn from, the experiences of other comparable nations.

Summary Data about the Six Countries

The nations included in this paper — Australia, Germany (former West Germany), France, Japan, Sweden, and Great Britain — have been specifically selected in order to illuminate the diversity of secondary school systems which operate within the industrialized world. The United States secondary school data was not incorporated into this paper because it was assumed that the audience for the paper would be familiar with such information.

As illustrated in Table M.1, there is a wide variance in population among the countries, ranging from 8.34 million in Sweden to 120.62 million in Japan. All have high literacy rates and require at least nine years of compulsory schooling. Of the six countries, Australia, Germany, and Japan have a twelve-month school year, whereas France, Sweden, and Great Britain have a nine-month calendar.

Among the diverse selection of school systems examined in this paper, there may be some commonalities that arise from the descriptive comparisons. It is hoped that by identifying such common characteristics, a determination can be made as to whether or not they can assist in the design of a comprehensive high school in the United States. Additionally, there may be unique elements within a school system that could be equally beneficial to examine.

Insert Table M.1 about here

It should be understood that the authors recognize the danger of borrowing pieces of a school system without regard for the cultural context in which it operates. For example, it is unlikely that United States' students will automatically benefit from the implementation of a 240-day school year, as seen in Japan. Such a calendar is entrenched in various aspects of Japanese culture and may not be as readily accepted in the United States.

The following descriptive section has been organized according to country and area of focus. While a holistic picture of each country's secondary school system was the original aim, the magnitude of such an endeavor made this goal virtually impossible. This was partially due to a lack of time and partially to insufficient information regarding certain areas of focus. Consequently, the following descriptive section has various gaps that may need to be addressed in a subsequent paper.

Australia

Learner Outcomes

The aims of the Australian educational system indicate a changing balance between individual and community needs as the student moves through the system. At the secondary level of schooling, emphasis is placed upon the fullest possible development of potential in each individual student (Kurian, 1988).

Recently, the aims of education, although not officially stated, have increasingly focused on schooling as a means to improve national productivity and upgrade work-force skills. The emphasis has shifted from the intrinsic to the instrumental value of education (Blackmore, 1990).

Learning Process

Curriculum

The individual state or territory is primarily responsible for the preparation and development of curriculum materials. Although structural similarities exist, curricular differences are visible both between states and schools. This is most obvious at the junior and middle secondary school levels. Various strategies exist within each state or territory; however, the curriculum development unit works closely with the national Curriculum Development Center (CDC). The CDC has developed a *field services subprogram*, which supplies practical support to schools and practitioners. As a result, there is increased communication and organization at all levels of curriculum development.

The areas of curricular design that receive the most support include: (a) languages; (b) cultural, multi-cultural, and sociological education; (c) environmental education; (d) international education; (e) visual and performing arts; and (f) science and mathematics education.

Recently, the direction of curricular development has been influenced by three new trends: (a) a renewed emphasis on basic skills and knowledge, (b) an increased emphasis on continuity of curriculum throughout the school years, and (c) an expansion of subjects included in the curriculum (Kurian).

Junior Secondary School generally includes the years seven or eight through ten. For the first two years there is a basic core curriculum in all systems, which includes English, mathematics, and humanities or social sciences. In addition to the core, optional subjects such as humanities, languages, social sciences, commerce, art, music, home economics, manual arts, and agriculture are selected by the student. Some systems have experimented with subjects such as consumer education, shorthand, typing, drivers education, and drama.

Senior Secondary School, which includes years eleven and twelve, generally does not have a required core of subjects, although in practice most students study mathematics and English. In addition, there is a wide variety of optional courses such as computer science, history, economics, politics, technology, psychology, drama, and public speaking. Recently there has been a move to broaden the curriculum for those students who do not intend to pursue tertiary studies (Kurian).

Instruction

Assessment

In most states and territories, schools have the responsibility for examinations and assessment of progress at all levels. The first formal qualification, the *school certificate*, is awarded on the basis of internal school examinations and teacher assessment at the end of compulsory schooling, usually the end of year ten. At this time, students have the option to enter the labor market, or continue their studies at a Technical and Further Education (TAFE) institution or private business college. Only after the last year (twelve) of senior secondary is an external examination required. This examination leads to the *higher school certificate*. Recently, Queensland and ACT have replaced this with an internal accredited examination. Successful completion of the higher school certificate is the basis for qualification for entry into the university or other tertiary institutions.

Organization

The most common type of upper secondary school in Australia is the co-educational, comprehensive school, although some states still have separate high schools which concentrate on technical, agricultural, or commercial subjects.

Partnerships with the Community

There has been a growing concern in Australia that a majority of young people leaving secondary school are entirely unprepared for the work place. The students attribute this to the failure of schools to give them an adequate understanding of work, how the economy is shaped, the various groups in their society, and their own ability to take on socially responsible roles.

In response to this concern, Cole (1989) illustrates three general types of work-oriented programs which have been introduced into secondary schools. The first type of programs are *achievement oriented*, which attempt to give students experience in making important, informed decisions, exercising responsibility, and becoming accountable for decisions. The second are *experience oriented*, which focus on giving students an early introduction to the work place. Finally, the third type of programs are *inquiry oriented*, which teach students to develop a critical view of the work place.

Achievement oriented programs attempt to provide the student with skills which are not normally encouraged in the standard classroom learning environment. Three innovative programs which fall into this category include *student-participation programs, mini-enterprises*, and *negotiated work experience*. The goals of *student-participation programs* are threefold: (a) To give students the chance to acquire and demonstrate the ability to act as participants with adults in the planning of activities or resolution of problems in both school and community environments; (b) to learn, as a group, the necessary skills of debating, negotiating, and decision-making; and (c) to connect both academic content and learning in order to initiate and plan a project which is human-service centered or addresses important social issues.

Examples of these projects, which are developed by the school and co-sponsored by an outside agency, include student-run restaurants and catering services, publishing projects, radio shows, theater groups, conferences and seminars, community volunteer work, and research projects for local community or business organizations. Projects must be done in groups (usually four to six students), and must be based on cooperation, including the establishment of group goals and decision making. A primary aim of the projects is to benefit others; therefore, a client group must be identified. The projects generally last from a few weeks to a maximum of one school year. Often a formal project contract is designed which identifies key tasks, its usefulness, and a timeline for completion of the project. Various techniques used to monitor the progress of students include the use of student journals, student management meetings, and client progress reports.

The goals of the *mini-enterprise programs* are to allow students to design, organize, and cooperate in a common enterprise, and to comprehend concepts associated with entrepreneurship skills. They attempt to give students the opportunity to manage others; to improve their self-confidence and problem solving abilities; to develop working relationships with adult advisors from industry; and to convince them that the establishment of a small business is a viable option for their future. The students take on the responsibility of choosing a product or service to market, investigating the economic potential of their venture, and raising funds to finance their business. Schools are careful to ensure that (a) students are aware of their goals and responsibilities within the project; (b) students establish clear decision-making and problem solving guidelines; (c) students are active participants in every stage of the project; and (d) students have access to sufficient resources, expert advisors, and adequate facilities for their project.

The primary elements of *negotiated work experience programs* include planned visits and conversations prior to work placement; and negotiations, which include the student, teacher, and employer. The aim is to enable the student to gain experience in work negotiation, designing project proposals, collaborative decision making, and managing limited resources.

Experience-oriented programs strive to give students an early introduction to the world of work. This may take the form of a vocational [illegible]ented work experience in a selected career or a more general experience that addres[illegible] of work that are common in most professions. Such a program gives the participant insight about what it is like to be an employee through a real or simulated work environment.

Vocational work experience is offered as part of the secondary school curriculum throughout most of Australia. It is designed to allow the participant to sample and test different professions. Findings show that students are satisfied with the program; however, some feel that the work is often menial and repetitive without room for individual decision making.

The *work simulation* project has developed as an alternative to the vocational work experience program in order to reduce the reliance on the outside community. It is a clear example of an attempt to bring a work situation into the classroom. Teachers establish simulated environments, within the classroom, which illustrate the roles, relationships and organizational approaches found in commerce and industry. Individuals from industry are employed as consultants in order to ensure that the simulations reflect the actual work-force situations. Cole (1989) asserts the such simulations are relatively easy to organize and can be repeated in various forms.

Inquiry-oriented programs focus on the social, moral, political, and economic questions associated with the work place. In a *research work experience* program, an entire class must identify and prioritize a number of work related topics which are worthy of further investigation. After such topics are identified, participants are given corresponding lessons, seminars, and readings. Additionally, they are expected to undertake individual research projects. Thus, students are exposed to a good mixture of both academic and vocational issues. Inquiry-oriented programs also employ a *work shadowing* technique. This allows participants to observe an individual at work, as well as interview the person about work related issues. Cole argues that such a program is incorporated easily into the curriculum, research-based, and economical.

Current Reforms

Recently, the education-economy link has become an important focus area of curricular reform and educational administration in Australia. As a result, states have introduced careers education, work experience, and new subjects such as *Technology and The World of Work*. Many areas of the school system are undergoing reform and restructuring in order to: (a) clarify the links between school and work, (b) encompass a broader range of educational activities and outcomes, and (c) encourage student retention (Blackmore, 1990). The areas targeted for reform include assessment and credentialing, school organization, and system administration.

At both the state and federal levels, youth policy has become an electoral issue in Australia. A multitude of reports have been produced by government, business, and educational authorities that emphasize the need to make education relevant to the needs of the individual, as well as the economic needs of the nation. This is exemplified at the Technical and Further Education (TAFE) colleges, where pre-vocational, vocational, and apprenticeship training programs have been extended. Interestingly, within the TAFE programs, the emphasis is on *general transferable skills* training. The off-the-job component of training programs is broad based, emphasizes families of occupations, and includes social science and humanities education (Blackmore, 1990).

As Blackmore explains, the distinctions between training for work and educating for life have virtually disappeared. Education has become much more vocationalized at all levels. Educational objectives are not just informed by the world-of-work, it has actually come to dominate them.

Implications for School Design

- When discussing curricula, there has been a distinct shift away from an emphasis on innovation and personal development, toward issues such as school effectiveness, labor market structures, and outcomes of schooling.

- Education is thought of as the means to upgrade workforce productivity and, consequently, increase national productivity.

- The need to impart general, transferable skills (adaptable from one work setting to another), both social and technical, is of utmost importance and is currently being addressed.

Germany

Learner Outcomes

The aim of the German educational policy is to "provide each citizen with *high-quality* academic and vocational training commensurate with his/her abilities and interests and to continue to make opportunities for personal, occupational and political education available to him/her throughout his/her life" (Federal Republic of Germany, 1988).

The following are important considerations that have helped to shape German policy:

- Education must enable individuals to become socially responsible citizens by learning through education and experience the values of independence, solidarity, and responsibility.

- Schooling should equip individuals the attitudes, knowledge, and skills to live an independent and successful life.

- Attempts should be made to provide equality of opportunity for both men and women, handicapped and nonhandicapped, and both German and non-German.

- It is imperative to develop a well-trained and productive workforce that will ultimately lead to a high quality of life for both the individual and the nation as a whole.

- The provision and promotion of vocational training, which is seen as a prerequisite for successful participation in professional and social life, should be a priority.

- Encouragement of ongoing vocational education, given the rapid pace of technological change, is a necessity.

- Parents and educational institutions should work cooperatively for the benefit of both the individual and the school system.

- All attempts should be made to promote equal access and opportunity for women.

The basic principle is that every individual has the right to a quality education. Each state is obligated to provide the type of education that parents prefer, as well as the kind that promotes the development of competent, responsible citizens. Due to the autonomous nature of the German states, their aims differ slightly, but the differences are mainly in language rather than intent (Federal Republic of Germany).

Learning Process

The learning process (curriculum, instruction, and assessment) is better explained and understood in relationship to the German secondary system,. Due to the complexity of that system, the format has been altered slightly for this section in order to present a brief description of the system and the four tracks of general education. Within each of the four, the curriculum, for example, is selected to reach the aims of the each school organization..

Curriculum

The first level of secondary education is made up of four tracks of general education, which include:

Hauptschule (grades five or seven through nine or ten)

The lower level, general secondary school; referred to as the main school; approximately thirty percent of all thirteen-year-olds in the country attend this type of school until the end of the compulsory years of education. Graduates receive a certificate of completion known as the Abschlusszeugnis without taking a terminal examination. Upon graduation, most individuals proceed to a part-time vocational school and apprenticeship, which leads to a career in a specific trade (Rust, 1988). Various forms of continuing education are available to Hauptschule graduates if they should want to gain qualifications for entrance into higher education.

Realschule (grades five or seven through ten)

The middle school, which gives access to upper secondary school. Over twenty-six percent of all thirteen- year-olds attend a middle school. Like the Hauptschule, the Realschule offers general education; however, it offers a more advanced form of technical training. Graduates receive the *RealschulabschluB*, an intermediate school leaving certificate, which enables them to enter a variety of training programs in nonacademic occupations. Moreover, it qualifies them to attend a *Fachoberschule*, a specialized technical secondary school, which, in turn, gives access to an institution of higher education known as Fachhohschule, which offers practice-related courses of a scientific nature.

Gymnasium (grades five or seven through thirteen)

The nine-year academic secondary school, provides both lower and upper level secondary education and leads to the acquisition of the Abitur, the higher education entrance qualification. During the upper levels of Gymnasium, students are able to choose the fields they want from a combination of courses; however, three general fields of study must be represented equally among the courses they select. These include (a) language, literature and art; (b) the social sciences; and (c) mathematics, science and technology. Moreover, in the upper levels of Gymnasium, there are several different types of programs, including the *Gymnasien*, which provides a general technical education, and *Kollegschulen* second way, which prepares students academically for higher education.

Gesamtschule (grades five or seven through ten)

The comprehensive school, which combines the tracks noted above into one, and confers a leaving certificate, which is similar to the general secondary school. In the states of West Berlin and Hesse, comprehensive schools are well established; however, in others, they are still in a trial stage (Rust).

Instruction

Assessment

Students' performance is evaluated by the traditional numerical grading system ranging from 1 - very good, 2 - good, 3 - satisfactory, 4 - passing, 5 - not passing. Different states have variations to this scale, including written reports and conferences with parents. If an individual fails, he/she is held back one year. A second failure may result in the student being transferred to the same grade in the main school or a vocational school.

Organization

Individuals are able to advance automatically from primary school to the main school or comprehensive school. However, entrance into the middle school or academic secondary school is subject to a selection process.

Gaining entrance into the academic secondary school requires participation in an extremely rigorous selection process. This process serves to eliminate a great number of individuals who later have the will and ability to proceed to higher education. Several programs have been designed to alleviate this problem, allowing access at several points in the individual's academic career (Rust). Moreover, schools which provide alternative programs for obtaining the Abitur, are available to individuals who wish to further their education. These schools are referred to as *second way schools*, the usual route through academic secondary schools being the *first route*. Such schools are exemplified by the Abendgymnasium, an academic secondary evening school, and the Kolleg, a university preparatory school for adults, which provides intensive, full-time courses for a period of two to three years (Rust,1988). Entrance requirements for such programs can be met though the completion of the middle school or certain vocational programs with a great deal of consideration given to work experience. Both programs are designed to lead to the Abitur examination.

Foreign Workers

With approximately five million (1987) foreigners living in Germany, the government has made special provisions for their children, who make up over nine percent of the student population. Such students have the same rights and responsibilities as German students and all attempts are made to integrate them into classrooms with German children. Foreign children receive five hours of instruction in their native language each week, in addition to the core curriculum. The language classes, taught by native speakers, also include the history, geography and religion of the student's country.

A special program has also been designed to assist those foreigners who wish to complete a form of vocational training and is specifically geared to address various problems they may encounter in a new country. The goal of the program is to enable as many individuals as possible to successfully complete a vocational training program.

Partnerships with the Community

As Nothdurft (1989) explains, the provision of a smooth, systematic transition from school to work is one of the strengths of the German school system. There is a unique blend of government and private industry cooperation, generally referred to as the *dual system*, which facilitates the preparation of workers who are skilled in both the theory and practice of their trade. Such skills are acquired both on-the-job and in school and often supplemented by specialized courses offered at various training centers.

It is at the second level of secondary education that the dual system comes into play. Currently, over two-thirds of compulsory school graduates participate in the dual system, where they choose from over 480 different trades. Upon choosing a trade, at the age of sixteen, graduates must find an employer who is willing to accept them as an apprentice. At this point, the employer and apprentice enter into a contract, which stipulates the expectations and responsibilities of each, and what the apprentice will be paid (Nothdurft, 1989).

The average apprenticeship continues for three years. During this time, the individual spends approximately one day each week at a state-run vocational school, and the remaining four days working under the supervision of a *Master* or other qualified instructor. It is the school's responsibility to provide a uniform theoretical background for the skills students are learning, and to attempt to make up for variations in training from one company to another.

Schools in the Dual System

There are a great variety of vocational and technical schools from which individuals can choose. The five most common types of schools include:

Berufsschule

Berufsschule is a part-time vocational school and the most common form of vocational education. Over three-fourths of all students pursuing vocational education choose this route. It provides the compulsory part-time schooling with an apprenticeship in fields such as business, trade and industry, home economics, mining, and agriculture.

Courses taken in school, one or two days per week, focus on the theoretical background to the practical training received in the apprenticeship. The program usually lasts three years. Graduates receive a certificate known as *Abschlusszeugnis*, which is a prerequisite to the final apprenticeship examination given by industry. If this final examination is passed, the graduate becomes *Facharbieter*, or a skilled worker. Most graduates of this program enter the workforce directly (Rust).

Berufsfachschule

Berufstachschule is a full-time vocational school, which was designed as an alternative to part-time vocational school, yet still holds the same objectives. It accepts graduates from the main, middle, and comprehensive lower secondary schools, offering them full-time training without an apprenticeship. Commercial and hotel trades, childcare, and cosmetology are common areas of study for students in such schools. Most programs last for a period of one to three years, and leads to a certificate which qualifies graduates as *skilled workers*.

Berufsaufbauschule

Berufsaufbauschule is an extended vocational school which offers additional general and vocational education, both part-time and full-time, to individuals who need to fulfill requirements in a chosen field. It is designed as a intermediate institution between general academic and vocational schools. General studies such as mathematics, German, history, citizenship, and science are combined with vocational courses. Students who enter must complete at least six months in a part-time vocational high school or other institution. Students must pass a leaving examination, Abschlussprufung, which certifies them for positions in business and industry at a more advanced level than skilled worker.

Fachoberschule

Fachoberschule is a specialized secondary school, specifically designed for the graduates of the middle school, which provides additional general or vocational opportunities in higher technical schools and perhaps tertiary education. Many graduates of vocational programs are admitted at the twelfth grade level. Graduates receive Abschlusszeugris, a certificate of completion, which gives them access to institutions of specialized higher education.

Fachsule

Fachsule is a technical secondary school with the most advanced form of full-time vocational training. Only graduates of part-time vocational schools, or the equivalent, who have received additional practical experience are accepted into Fachsule. Most programs last from one to three years and focus on areas such as agriculture, business and administration, chemistry and technology, data processing, home economics, industry, social work, mining, and textiles. After passing a terminal examination, graduates receive the Abschlusszeugnis and are prepared to enter one of many occupations as skilled technicians. Due to the highly specific nature of the program, graduates do not have the proper qualifications needed to pursue higher education.

Staffing

Physical Facilities

Cost

Future Goals

- The improvement and intensification of vocational preparation in general education, as well as vocational training.
- The improvement of vocational training opportunities available to women, as well as the promotion of their participation in technical training programs in the area of science and industry.
- Increased attention on modern communication technologies in schools, vocational training, continuing education, and higher education.
- The fostering of environmental awareness and environmentally appropriate behavior in all areas of life: family, home, work, industry, and leisure.
- The expanding of continuing education in order to keep up with rapid technological, economic, and social change.

Implications for School Design

Nothdurft has noted several compelling aspects of the German systems:

- The dual system is deeply ingrained in both the culture and economy of Germany.
- Such a system emphasizes the skills that the emerging economy demands, (i.e., problem solving, adaptability).
- As international markets becomes more integrated, the importance of the workforce increases. German school credentials serve as *seals of quality* and guarantee dependable levels of competence to employers.
- In order to succeed in vocational training programs, basic levels of knowledge in reading, calculating (mathematics), and problem solving are imperative.
- Unions and employers both are committed to the belief that industry should lead in the design and financing of vocational training programs.
- Such shared responsibility between employer/union/government means that cooperation is crucial to success.
- Youth make an indirect investment in their own future. Youth trainees receive a small income, but must commit to three years of study and training.
- Streaming (separation according to performance levels) is a primary, yet problematic, feature of the public school system which can create educational, social, and economic burdens in later years.

France

Learner Outcomes

Defined in 1947 by the Langevin-Wallon Commission report, the aims of education in France emphasize equal chances in life for all, the satisfaction of workforce-needs for qualified human resources, and, as a priority, the development of the personality of each student. However, since that time a great majority of the resources allocated to education has served to develop a system which meets the needs of the economy rather than promoting equal opportunity for all.

Learning Process

Curriculum

The Ministry of Education employs national commissions for curricular development. Because of the highly centralized and standardized design of education, only slight curricular variations are permitted at the local level. Inspectors regularly visit classrooms to ensure that the established guidelines are followed.

Instruction

Assessment

The examination system is controlled by the teachers in France and the first form of certification is given to students after the first cycle of secondary education, which corresponds with approximately nine years of schooling.

At the end of two years in the second cycle of secondary education, guidance counselors participate in commissions which assess individual students and decide whether they will go on to the third grade of general secondary school, or be placed in special pre-apprenticeship classes. Schools have different policies when it comes to assessment at this level. Some feel the differing systems of assessment leads to the inequality of opportunities between individuals (Eicher).

At the end of four years in the second cycle, students take an examination for their *Baccalaureat*, a diploma which certifies successful completion of secondary education and also allows students free access to universities in France. Approximately 30% of the total candidates fail to pass the exam.

Organization

Education in France is highly centralized. Most operations are controlled by the Ministry of Education at all levels. However, the control of agricultural high schools is allocated to the Ministry of Agriculture. Moreover, some vocational training is controlled by different companies, or institutions created by companies.

There are two distinct cycles of secondary education. Most students attend the first cycle, *Colleges d'Enseignement Secondaire* (CES), for four years until the age of sixteen. However, approximately thirty percent of the student population are allowed to attend pre-technical education courses after completing two years in CES. In the second cycle there are two streams from which students can choose their course of study. The majority of students pursue the *long stream*, which leads to the *Baccalaureat* and most likely to tertiary education. Students may attend a general high school (28 percent) or a vocational high school (.8 percent). This course of study has been accused of being highly abstract, and lacking in relevance to the labor market.

The *short stream*, in which thirty percent of the total student population enrolls, is highly technical and leads to a *Certificat d'Aptitude Professionnelle* (CAP). This course of study takes only two years and prepares the student for work in technical fields. Many feel that the short stream has been neglected by the Ministry of Education. Discouraged by many parents, students almost never choose this stream voluntarily. Consequently, achievement levels have been consistently low.

Partnerships with Community

Although access to higher education has increased in recent years, there are still striking inequalities due to the socioeconomic differences among students. In some disadvantaged communities, partnerships aid the school-to-work transition.

There are several types of technical and vocational training programs available to students who attend vocational high schools. Training is available in schools or at special centers which employ instructors from the business community. Such centers are still under the strict control of the Ministry of Education.

Students may pursue a *short* or *long* technical education at the secondary level. Within the short technical education option, students choose to complete a two year *vocational studies certificate* (BEP) or a two to three year *vocational training certificate* (CAP). The BEP offers sixty-one fields from which students can choose, and is considered a more versatile vocational training program. Many of the fields students choose are also offered at the tertiary level, therefore they have the option of pursuing further study.

The long technical education option provides three years of advanced technical education in specially designed technical high schools. Students study for a technicians certificate in one of fifty-eight fields. Less than ten percent of students who choose this route go on to tertiary education. The popularity of this option is declining, with many students opting for the technical baccalaureate instead.

In 1982, with the problems of youth unemployment rapidly increasing, the government designed an experimental system of *Mission Locales* or local task forces. The purpose for the creation of the task forces is to locate, assist, and follow up with individuals who are having trouble securing employment, and to improve the individual and community conditions of the participants (Nothdurft).

Each Mission Locale has become a single resource center for the distribution of a wide variety of educational as well as social and economic services. With the cooperation of approximately 75 agricultural firms and 124 commercial and industrial firms, individuals are given access to adult literacy programs, work experience, job training, health and welfare services, housing and transportation services, and various types of counseling. Recently, thirty eight of the Mission Locales have been included in an experimental program which will help identify a variety of new skills needed by individuals in the face of rapid technological change (Nothdurft).

Staffing

Secondary school teachers are recruited nationally through a competitive examination which is taken after four years at a university.

Physical Facilities

Cost

The cost of education to students in France is minimal; however, it increases with age. There is financial aid available for secondary schools in the form of tax reductions or scholarships.

The total expenditure in 1980 was 176.9 billion French francs, which is equivalent to 6.4 percent of the GNP. The bulk of this amount is financed by the central government.

Communities and households pay only a small percentage of the cost. As compared to other countries, the per student cost for schooling is relatively low in France.

Future Reforms

The primary criticism of secondary education in France has been the increased production of untrained, uncertified youth. Students graduate without being qualified for jobs, or able to adapt to the communications revolution, therefore many feel there is a pressing need for knowledge that is found outside the school system.

Implications for School Design

- France has been successful in designing innovative partnerships to aid disadvantaged communities with the school-to-work transition.

- Local community-based educational programs are preferable to national programs which are implemented from the top-down.

- The integration of social service programs (social, educational, and economic) at the local level has encouraged individual participation in education and strengthened community ties.

Japan

Learner Outcomes

The goals of education in Japan are stated in the Fundamental Law of Education, written in 1947, which highlights the role of education in fostering the full development of personality. It advocates the raising of individuals who respect truth and justice, individual values, and labor. Moreover, they should be instilled with a strong sense of responsibility, and be committed to the building of a peaceful nation and society.

Recently, these goals have been updated for modern Japanese youth who are citizens in a larger, global society, which is undergoing rapid progress in science and technology, as well as economic and social development. It is now recommended that the aims of education for the development of personality should attempt to "...help people acquire the abilities for a satisfactory and spontaneous life, for adapting to social reality, and for the creative solution to difficulties. The Japanese people, showing tolerance for the values of others... should contribute to the peace of the world and to the welfare of mankind through the development of a distinct but universal culture" (Kanaya, 1988, p. 404).

Clearly, the emphasis of education in Japan is on the development of general knowledge rather than training for specific occupational skills. This emphasis is based on the assumption that young people should have the ability to flexibly cope with swift progress in science and technology and adapt to rapid changes in society. Education is seen as a key to economic development, national cohesion, international status, personal development, character building, and the creation and maintenance of personal relationships (White, M., 1987).

Learning Process

Curriculum

During the first year of upper secondary school, students throughout Japan take the same courses based on government prescribed curriculum and textbooks, which allows for some differences among schools. In the second and third years, however, students are able to choose from an array of elective courses, such as languages and technical or vocational subjects (Suzuki, 1990).

All schools adhere to the guidelines spelled out in the *Course of Study for Upper Secondary Schools*, issued by the Ministry of Education. There are several categories by which courses can be classified, according to the pattern of curriculum: general academic, technical, commercial, and domestic arts. As of 1988, fifty-one percent of the upper secondary schools offered general courses only, twenty-seven percent offered both general and vocational, and the remaining offered only vocational courses. Currently, over seventy-three percent of all students are enrolled in general courses.

The following three examples of upper secondary schools illustrate the diversity of programs available to the Japanese student:

Public Upper Secondary School

In the public upper secondary school school, all students in grade ten are required to take the fundamental subjects required by the government. In grade eleven, in addition to the required subjects, they are allowed to choose one elective from subjects such as

Japanese literary history, world history, physics, sports, and English. During the final year, students must decide on either an academic, scientific, or physical course of study. Additionally, students are expected to actively participate in extra curricular activities and clubs.

Tokyo Metropolitan Upper Secondary School:

The requirements in the Tokyo Metropolitan Upper Secondary School are similar to the previous example. However, in grades ten and eleven there is a strong focus placed on homeroom activities. This focus is aimed at fostering the importance of group cooperation. Moreover, a great deal of emphasis is given to individual needs through the provision of extra academic guidance, either after school or during vacations (Ishizaka, 1989).

Public Upper Secondary School for the Promotion of International Understanding

Currently, a key issue in Japanese education is the promotion of international understanding. A number of schools are starting programs which focus on this goal. The aims of this specific school are: (a) To instill in students an international awareness and to teach them to utilize this knowledge appropriately; (b) to educate students about the diversity of world cultures and values, while concurrently strengthening their knowledge of Japanese language and culture, and the ability to introduce Japanese industry and culture to the global community; and (c) to give students a holistic view of the international community so that they are able to go beyond national borders and actively work for the resolution of disputes and the preservation of peace.

Thus, increased global awareness provides students with the ability to build relationships internationally through mutual understanding. To achieve these goals and motivate students to learn, teachers provide a rich view of international cultures through school instruction and activities. Moreover, students are offered courses in German, French, and Chinese languages (Ishizaka).

The above examples illustrate the options available to the Japanese student. Although there are variations in curriculum, students are subject to a rigorous national core curriculum and all attend school for 240 days each year. It is due to these factors, plus strong family support, that some scholars feel Japanese students learn in twelve years what it takes an American student sixteen years to learn (Walberg, 1988). However, the additional instruction outside of school, in *Juku*, should be taken into consideration when discussing Japanese student achievement.

Juku

The term Juku refers to a private after-school class that most Japanese children in secondary school attend to receive instruction in some major academic subject. As Mary White explains, the term generally refers to all extracurricular academic lessons. However, there are a variety of educational settings and goals.

The instructional settings range from small groups of students who gather in a teacher's home to large schools with hundreds of students. Moreover, the content of the courses range from remedial to very advanced. The aim may be to raise a child to a certain level in a particular subject, or to prepare for an important entrance examination to a prestigious university (White, M.).

Juku, now a very lucrative industry in Japan, also serves as a type of unregulated and unaccredited addition to the formal educational system. White argues that its success is a response to pressures which have arisen due to the "...discrepancies between the goals of individual families, the egalitarian ideology, and the structuring of the formal school system" (White, M.).

Instruction

Teachers in Japan see their role as *facilitator* rather than merely conveyers of factual information. They have traditionally viewed knowledge as something to be constructed by the students, not simply transmitted by the instructor. As Sato and McLaughlin (1982) point out, teachers attempt to pose challenging questions, allow sufficient time for contemplation, and try to use a variety of instructional techniques in order to respond to different learning styles among students. Thus, without tailoring instruction to each student, teachers are able to address individual differences in learning (Sato & McLaughlin).

Due to the nature of teaching in Japan, teachers delegate a great deal of classroom management to the students. Instead of spending time on discipline and management, they are able to guide interpersonal relationships in the classroom. Much emphasis is placed on mixed-ability groupings, whereby students participate in peer supervision, peer teaching, and group learning. It is strongly believed that students can learn from the diversity within the group. Japanese teachers view whole-group lessons as important because they can teach students, not only about the subject matter, but also about social interaction and problem solving (Sato & McLaughlin). Classroom disruption is not regarded as the sole responsibility of the teacher. It is the students who share a mutual responsibility to control the level of disruption within the classroom (Sato & McLaughlin).

Assessment

Assessment in the Japanese upper secondary school is influenced by a cultural bias against making distinctions between students, and by the egalitarian focus of the influential Teachers Union. As a result, attempts are made to avoid tracking according to student ability, and special efforts are taken to bring individual students up to speed if they happen to fall behind (White, M.).

Therefore, achievement in upper secondary school is calculated on a credit system which is based on attendance rather than performance. One credit is equal to thirty-five class hours, and eighty credits must be completed by the student in order to graduate from upper secondary school. This system is more a measure of the degree to which a student has participated in a specific set of educational experiences, but does not reflect what the individual has actually gained from such experiences (Howarth, 1991). However, it does serve as a reflection of the individual's persistence and determination. Reward is based on effort rather than innate ability.

Student achievement in Japan is viewed as changeable. Each student is taught to value the achievement of the entire class, and thereby helping assure that classmates do not fall behind (U.S. GAO, 1990). Moreover, promotion as a group takes first priority (White, M.).

Organization

Because upper secondary school is not a part of the compulsory school system, students in Japan are required to take examinations in order to gain access to public high schools. Near the end of lower secondary school, Japanese students prepare for an examination that will determine which, if any, upper secondary school they will attend. There are generally fewer places available within each district than students who would like to enter. However, over ninety-four percent of compulsory school graduates continue their studies (White, M.). Upper secondary schools, both public and private, are hierarchically ranked within each district. This unofficial ranking is based on the school's reputation, which is earned by sending students to the most prestigious universities in Japan. Therefore, the more graduates a school sends to Tokyo University, which is the most prestigious in the country, the higher the school's ranking.

Each student tries to get into the best school possible. Those who take the examination must select their first choice of schools. This selection is very important, because rarely do schools accept students who do not choose them first. Therefore, the student must make a selection based on realistic expectations that he or she actually has a chance to be accepted (Howarth).

The examinations focus on five subject areas: Japanese, English, mathematics, general science, and social studies. In the non-mathematical subjects, the examinations place a great deal of emphasis upon recall and make use of limited response and multiple choice questions.

Occasionally, students may apply to schools which require test scores slightly higher that what they can realistically achieve. Consequently, these students attend *chugakko-ronin* or *cram school* for a period of twelve months and repeat the examinations the following year (Howarth, 1991).

Partnerships with the Community

Approximately thirty percent of high school graduates continue on to a university, technical college, or junior college. Another twenty-eight percent attend private schools, which provide preparation for the college entry examinations, and roughly thirty-five percent proceed directly to the work force (U.S. GAO).

The transition from high school to tertiary education mirrors the student's experience from lower to upper secondary school. Again, there is a highly competitive entrance examination, which students spend much of their school time and leisure time preparing to take. Institutions are ranked according to prestige and students attempt to get into the best one possible. This is important because social status in adult life is directly linked to academic achievement. In other words, adults are judged by the level of education they achieve and which university they attend (Cogan, 1984).

The graduates who directly enter the work force are almost always hired on the basis of the schools' recommendations (U.S. GAO). At the start of each school year, the high schools, acting as representatives of the public employment service, choose and rank their graduating students for each of the job openings. The main criteria used for selection are grades and behavior (i.e., attendance). Following the interview process, the employers usually hire all or most of the nominees (U.S. GAO).

In most situations, employers prefer to hire an individual with highly developed general skills and take the responsibility for providing occupational training that best fits the company's needs. Approximately three-quarters of the companies in Japan provide training for their employees, both on- and off-the-job. Such training includes rotation reform of workers among assignments, group activities aimed at improving the firm's performance, and correspondence courses (U.S. GAO).

Staffing

Teachers in Japan are highly respected at both the individual and collective level. Individually, teachers have a great deal of confidence in their specialties. They take a holistic approach to the motivation of students. They not only teach specialized subjects, but also attend to the academic and personal problems of the students. On the average, seventeen hours a week is spent teaching; the rest of the time is committed to class preparation, committee meetings, counseling, and guidance (Cogan). Teachers usually spend an average of ten hours a day at school performing a wide variety of administrative, teaching, outreach, and counseling duties. Moreover, it is expected that they work more than the 240 days of school each year. Most teachers work on more than half of their sixty vacation days (Sato & McLaughlin).

Collectively, the powerful Teachers Union acts as the guardian of the egalitarian nature of the Japanese educational system. Because the school is regarded as a moral community and has very high expectations of its student body, it is left up to the teachers to exercise moral authority over the students, both in and outside of school. Therefore, a strong personal relationship usually develops between the teacher, the student, and the student's parents (Shimahara, 1985).

The respect that teachers are given in Japan is reflected in their status and salary. Their annual salary at entry-level, plus bonuses, is higher than any other civil servant position. Moreover, their salaries are equal to, or greater than, corresponding salaries in large companies (White, M.).

In addition to all their professional responsibilities, Japanese teachers do have families of their own. Women receive a one-year maternity leave, and can feel confident in returning to work because there is an excellent government-funded child care program (Sato & McLaughlin).

Physical Facilities

Most Japanese secondary schools are less than fifty years old. Many were built during the post-war period and are structurally similar to the American schools of the 1940s. Although they are not luxurious, they are comfortable and functional (White, M.).

Cost

Compulsory schooling is free of charge to Japanese students. However, this only lasts through lower secondary school. At the upper secondary level, school is not free, yet post-compulsory education is still in high demand.

Current Reforms

The Japanese are currently focusing on three main areas of reform, which include the promotion of lifelong learning, increased respect for individuality in education, and the development of an educational system that is open to change. Lifelong learning reforms will provide for increased vocational and out-of-school education. Included in this is promotion of the home and community as places of learning. Additionally, public use of upper secondary school facilities by the local community for places of learning outside of school will be encouraged.

Increased respect for individuality in education will be promoted through more flexibility and diversification of the curricula, an emphasis on moral education, and corresponding teacher training. Finally, Japan is hoping to develop an educational system which is more open to change. Through increased foreign language promotion it will attempt to confront the "internationalization" of society (Suzuki, p. 25).

Implications for School Design

- The Japanese student usually has a very clear idea of what he or she must know in order to achieve a specific result. During lower secondary school, mock examinations are widely available and taken several times before the real thing.

- Coherent standards have been established through a national curricula and approved textbooks. This ensures a uniform schooling for all.

- Upper secondary school entrance examinations are taken early, at age fourteen, which allows students to focus their studies as soon as they enter lower secondary school (Howarth). Such a competitive sorting process acts as an incentive system for high achievement.

- There is a concentration on *the basics*, though the development of the individual is viewed holistically without neglect of art, music, or physical education.

- Extremely high levels of performance are demanded of the students.

- Teachers develop a close personal relationship with the student and family. Moreover, they take an interest in the moral actions of the student both in and outside of the school.

- Teachers are given a great deal of respect in Japan and are rewarded financially through a salary and bonus system.

- Japan has recognized the need for internationally transferable skills, and is attempting to define such skills and design appropriate reforms.

Sweden

Learner Outcomes

The official goals of both compulsory and upper secondary education in Sweden are to equip individuals with knowledge and to develop their skills. This is done in order to ensure that the next generation of Swedish youth develop into "balanced individuals and competent, responsible members of society" (Fact Sheets on Sweden, 1989). The general goals and guidelines of secondary education in Sweden places a great deal of emphasis upon future vocational activity and further education. Specific aims are dependent upon the different school branches which have been integrated into upper secondary education. Upper secondary combines the academic traditions of the *gymnasium*, which prepares students for tertiary studies; the trade and skills focus of the vocational schools, which prepares students for skilled crafts occupations; and professional training of the *fackskola*, which prepares students in commerce and other professions. Upper secondary education clearly attempts to prepare students for either further study or entrance into the labor market.

Learning Process

Curriculum

The upper secondary school offers approximately thirty different lines of study, with over one hundred specialized courses to choose from after the completion of compulsory schooling. The lines are either theoretical or practical in nature, and fall within six educational or occupational divisions. The six divisions include: a) languages, social sciences, and artistic pursuits; b) caring professions, social services, and consumer education; c) economics, commerce, and office work; d) industrial trades and crafts; e) technology and natural sciences; and f) agriculture, horticulture, and forestry. Each line has a unique goal and specific curriculum designed in order to ensure that the goal is met.

Although there are a variety of options, the centrally framed core curriculum of Swedish, English, mathematics, physical education, civics, line-specific coursework, and industry specific worklife experiences is maintained. The length of study varies between two to four years, depending on the course of study. After the completion of a two-year course, upper secondary school offers higher specialized courses, such as computer servicing or industrial electronics. However, the specialized courses are carefully regulated in order to avoid saturation of the labor market in specific fields.

Sweden is reviewing and attempting to simplify the current complex array of lines and courses. There will be increased uniformity in the curricular core of the first grade, and all lines will be changed to three-year programs. In addition to vocational theory and practice, the vocational lines will include more general theoretical subjects, such as foreign languages and mathematics. Moreover, the lines, which currently lead to tertiary study, will be integrated more closely with working life (Fact Sheets on Sweden, 1989).

Instruction

Assessment

There are no examinations in either compulsory or upper secondary school. Grades are given at the end of each term and parents are made aware of their child's progress and difficulties through an interview process. Grades are awarded on a five-point scale, five being the highest point given. Each number refers to the average national level of achievement in each subject.

At the end of upper secondary school, after a minimum two-year line of study, a leaving certificate is awarded, which confers general eligibility for tertiary education. Even two-year vocational programs provide eligibility for study at the university level. This opportunity has attracted good students, with high aspirations, and has increased the prestige of vocational programs (Husen). However, it is becoming increasingly more common to have three years of upper secondary school as a foundation for a university education.

Organization

Currently, over ninety percent of the students who complete compulsory schooling continue their education in upper secondary school. However, not all students begin upper secondary immediately. Many opt to enter the work force for a year to gain valuable occupational skills. Most students are accepted into their line of first choice. Among those who apply, sixteen and seventeen year-olds are given priority.

The other ten percent of sixteen-year-olds who do not continue on to upper secondary school are not forgotten in Sweden. Because they lack an adequate education, and the proper skills needed for employment, they are considered an "incomplete person" in Swedish society (Nothdurft). Therefore, the government has established a *Youth Guarantee* and has supported the design of several innovative special programs for these individuals.

Partnerships with the Community

Nothdurft explains that Sweden has made a strong commitment to its youth. Such a commitment has resulted in low dropout, unemployment, and illiteracy rates. There are many reasons for this success.

First, the government has an aggressive, national labor market policy which focuses on training and work experience. Second, it is clearly recognized in Sweden that post-compulsory education is necessary to successfully enter the labor market. In light of this, Sweden recently reformed the upper secondary school system to a more comprehensive system. This was done in order to respond to the need for higher skills and to encourage more students to continue their studies. Currently, over ninety percent of the compulsory school graduates choose to continue their studies. Finally, and most importantly, there is a deep, national consensus that education and work are the foundations of a good society.

Clearly, the dominant theme in Swedish education is the relationship between school and work. Although students learn these values at a very young age, the school to work transition becomes a focal point in upper secondary school. During the first and second year, students spend ten to twenty percent of their time in work settings. During the third year, however, the amount of time spent in work settings increases to sixty percent. After graduating from upper secondary school, approximately seventy-five percent enter the workforce and twenty-five percent pursue tertiary education.

The Youth Guarantee gives to local school authorities the responsibility of tracking and finding work and/or further education opportunities for every young person, ages sixteen to eighteen. The programs designed to achieve this goal include:

The Youth Center Program

The Youth Center program is designed to serve the disaffected and disadvantaged, with the understanding that not all individuals are able to make it in the standard public school system. The students are recruited under the national follow-up program or through word-of-mouth. Many of the participants may lack a sense of vision, self-confidence, or knowledge of alternative pathways. The Youth Center is a voluntary program where individuals are encouraged to (a) set their own goals, (b) test out different occupational areas, and (c) strengthen their basic skills. It is designed to recognize, value, and encourage diversity among individuals. The students have a variety of options to chose from including vocational courses, on-the-job training, academic studies, apprenticeship training, youth craft workshop, and a youth training scheme. It is staffed by teachers, career counselors, social workers, and a nurse. Beyond being a place of learning, the Center also gives students access to health care, welfare, and public assistance. As incentive, students are paid a small stipend to attend the Youth Center Program. As a result, approximately one-third of the students return to school, one-third enter the labor market, ten percent register at an employment service in pursuit of work, twenty percent relocate, and a small percentage fail to succeed at the Center (Nothdurft).

Humlan

Humlan is designed to serve as an alternative for those who do not make it in the Youth Center Program. It is considered "intensive care for the emotionally disadvantaged" (Nothdurft p. 20). Individuals who enter the Humlan program have suffered severe emotional trauma such as abandonment, physical and/or sexual abuse, or drug addiction. Such trauma has led to learned helplessness which resulted in school failure. Established in 1985, Humlan offers a gentle, caring approach to education and work for alienated youth. The four basic services offered include basic academic skills development, work experience, intensive personal therapy, and family counseling. The forty students who attend are cared for by five social workers and two teachers. The program is extremely expensive; however, the government views it as a long term investment which will help deter later social costs (Nothdurft).

Grimas Farm

Grimas Farm is also designed to serve as an alternative to the Youth Center Program. It promotes the idea of learning by doing and gives students the opportunity to immediately apply their academic skills through intensive work on a farm. For one year, students work forty hours per week, doing hands-on, farm related chores. Ten additional hours a week are spent in the classroom learning basic academic skills. Additionally, individuals complete personal projects and take part in family and personal therapy sessions. The farm employs three teachers and admits no more than twelve students. The goal is to give the students the opportunity to build self-confidence through various farm experiences. It is hoped that increased self-esteem may give them the confidence to return to the school system (Nothdurft).

Staffing

Physical Facilities

Cost

Implications for School Design

In his book *Schoolworks* (1990), Nothdurft helps identify key characteristics of the Swedish system, which may be important to American educators:

- The Swedish people recognize that education must have practical links to the world outside of school. By bringing the world of work into the classroom, the transition from school to work can be smoothed out (p. 25).
- It is beneficial to have varied and flexible alternative programs which fit a diverse population.
- Schools can provide more than just an education. Through a holistic approach they can try to strengthen and develop the entire individual. Therefore, schools should be efficiently used to provide access to a wide variety of services to the disadvantaged (i.e., job service, work experience, health services, counseling).
- Schools should provide individuals the opportunity for self-empowerment — the chance to make personal choices for the future.
- Innovations should be tested and evaluated, but most importantly given adequate time to work.

Great Britain

Learner Outcomes

Recently, the education system in Britain has gone through drastic changes. Such reforms, which are a direct result of the Education Reform Act of 1988, have been implemented in order to raise standards and to focus on the needs of a rapidly changing technological society. Moreover, some feel the reforms have also been implemented in order to prevent the dilution of a British national identity (Chira, 1992).

The government, feeling that standards have eroded over the years, now believes young people should "...be given the opportunity to acquire skills and knowledge that are of a high standard and directly relevant to the needs of an advanced technological country competing in international markets, and educational institutions should be enabled to offer education of a quality and kind expected by students, parents, and employers" (Education Reform in Britain, 1989).

The main objectives of the government's policies include: (a) higher standards at all levels of ability, (b) increased parental choice of schools, (c) increased access to post-secondary institutions which should attempt to be more responsive to the needs of the economy, and (d) highest possible returns on educational investments.

There are several ways in which the government has sought to raise the levels of achievement. A national curriculum, which is broader and more balanced, has been designed in order to help students develop and maintain the qualities and skills needed in adult life. Schools have been asked to become more sensitive and responsive to the needs of a multi-cultural society. The public examination system has been redesigned to focus on performance-based assessment. Finally, teacher quality has been addressed through better selection and increased training (Education Reform in Britain). Moreover, special attention has been given to the improvement of vocational education and training for students in the fourteen to eighteen year-old age group, including recognizing the need for cooperation between schools and industry in the quest for needed work-place skills.

Learning Process

Curriculum

For the first time ever, Britain has introduced a standardized national curriculum. It had been, for many years, one of the few countries in Europe that allowed schools and teachers to determine the curricula (White, J., 1990). Such a reform has gained wide acceptance throughout the country as a route to higher standards and equal opportunity for all (Chira). The government views the new curriculum as an *entitlement* for all citizens.

The new curriculum, which includes nine foundation subjects, has been designed by experts in specific fields and subsequently reviewed and approved by government officials (Chira). The nine subjects, which students ages five to sixteen are required to study, include English, mathematics, science, technology, geography, history, art, music, and physical education. The study of a foreign language, which is the tenth foundation subject, begins at age eleven. Moreover, religion is a statutory requirement for all ages in Britain (Maeroff, 1992).

Instruction

Assessment

In addition to curricular reform, Britain has correspondingly implemented changes in the way students are tested. The government is attempting to develop standardized assessment techniques that measure the growth of individuals in various subjects as they proceed through the curriculum. Current assessment procedures have moved away from standard multiple-choice examinations to performance based testing which, many argue, enables students to demonstrate their acquired knowledge and skills more thoroughly (Chira).

The core techniques used in performance based assessment includes portfolios, performances, exhibits, and essays (Maeroff). With a renewed interest in group learning and working cooperatively, many believe individualized, multiple choice tests are not as useful as performance based tests for the assessment of such skills. Moreover, it aids in the evaluation of reasoning abilities, which are becoming increasingly more valuable in the work place (Chira).

Organization

The government often uses the term entitlement in conjunction with the new national curriculum. This is meant to convey its commitment to equal access for all young people regardless of their background (Maeroff).

With the current reform has come an increased emphasis on school choice. Mandated attendance zones no longer exist in Britain, and students can go to schools outside of their immediate area as long as there is space available.

Traditionally, the public schools in Britain have come under the jurisdiction of Local Education Authorities (LEAs). However, there have been several changes in school governance over the past few years. Currently, every public school is locally managed.

Each school has a governing body and receives funding allocations from the LEA. Consequently, all decisions concerning expenditures are made at the building level (Maeroff).

Moreover, a new category of schools has been created by the reform act. Any publicly maintained school now has the option to become grant-maintained. In order to secure grant maintained status, a school must first receive the approval of the parents and, subsequently, the secretary of state. Grant maintained schools must agree to provide free education to students and adhere to the new national curricula. To ensure this agreement is not broken, such schools are subject to inspection by school authorities. Once the ties with the LEAs are broken, schools are maintained through a direct grant from the national government (Maeroff).

Most classes are arranged according to single age groups. Assignments are highly individualized, without emphasis on cooperative learning skills. Often students are organized into groups, yet work at their own pace. British teachers do not pressure students with deadlines or a mandated amount of work which should be completed each day (Maeroff).

Partnerships with the Community

Historically, compulsory education in Britain has had little relevance to the world of work. Nothdurft explains that, traditionally, the wealthy have sent their children to exclusive private schools, while the working class children have left school as early as possible (Nothdurft). Currently, the average school-leaving age in Britain is sixteen, and only sixteen percent of those who graduate go on to a university (Nothdurft). Schools are not required to provide job training; therefore, most school leavers either enter the job market directly or attend an occupational training program of some sort (Maeroff).

Currently, the national unemployment rate is approximately eight percent. Much of the blame, according to Nothdurft, is not so much focused on the quantity but the quality of the work force. Therefore, Britain has introduced various new programs aimed at the improvement of work-force competence (Nothdurft).

Approximately ten years ago the government started a training initiative with three primary aims: "to: (a) create opportunities for employed and unemployed adults to update, expand, or strengthen their skills; (b) assure trainees certified standards of skill; and (c) encourage young people to pursue either further education or formal training until at least age eighteen" (Nothdurft p. 60).

Youth Training Scheme

Out of this initiative the *Youth Training Scheme* was developed, and has since grown at a rapid pace. It offers two years of training and work experience to sixteen and seventeen year-olds. The 450,000 students presently involved in the Youth Training Scheme are provided with roughly twenty-five weeks of both on- and off-the-job training, as well as planned work experience. Participation in the program leads to vocational qualifications which are recognized by industry in Britain. Moreover, trainees are provided with a small, non-taxed allowance. The primary benefit of such a program is the direct exposure of trainees to employers who choose to take part in the Youth Training Scheme (Nothdurft).

The success of such a program serves to reinforce the already held belief by employers that secondary school graduates are unprepared for the world of work. The Youth Training Scheme produces what employers need, individuals who are ready to enter the work force with the proper skills and knowledge (Nothdurft).

Technical and Vocational Education Initiative (TVEI)

In 1983, another pilot project, known as the *Technical and Vocational Education Initiative* (TVEI), was introduced by the government. The aim of the project was to increase "...the problem-solving skills, initiative, enterprise, and creativity of fourteen to eighteen year-olds" (Nothdurft, p. 61).

The purpose of TVEI is to provide students with educational experiences which foster a positive attitude towards commerce, industry and the community; improve their self-confidence, flexibility, and independence; relate academic education with the world of work through the use of work shadowing, work experience, and local projects; and encourage students to remain in school in order to achieve qualifications which are valuable to both themselves and potential employers (Nothdurft).

The Local Education Authorities who take part in the TVEI project are encouraged to be creative and experimental. Such freedom has allowed for the creation of regional centers of expertise and extensive linkages with industry. Often, experts from industry are asked to act as curriculum or student advisors, or tutors.

Nothdurft describes one such TVEI project, located in a severely disadvantaged area of London, known as Newham Borough. The LEA decided to participate in TVEI in 1986, when it was faced with an unemployment rate of twenty percent (Nothdurft, p. 62). Through TVEI, Newham Borough has sought to: (a) design student-centered courses which have linkages to the outside-world; (b) ease the school-to-work transition for those in the program; (c) create a wider, more balanced curriculum; (d) provide girls with an equal opportunity; and (e) upgrade and build new technical facilities for schools (Nothdurft, 1989).

Currently, approximately two hundred and fifty students from four schools participate in the program. Each student must take core courses in academic, social, personal, and health areas. Additionally, they must choose two of four areas from the vocational/technical fields of study, including business and information technologies, graphic design, art, and technology sciences.

Since its implementation, TVEI has grown rapidly. Currently, most LEAs have a minimum of one TVEI project. By 1992, the TVEI program will be available in every British secondary school (Nothdurft).

Community School

Another that has attempted to aid in the school-to-work transition of British youths is the *Community School*. Traditionally used as a place for adult education, the Community School has been adapted to serve the needs of a society faced with high unemployment, a slow economy, and the need for new skills which would enable individuals to effectively compete in the workforce.

Currently, Community Schools, like secondary schools, serve students from the age of eleven to the age of eighteen. Many of the students continue after their compulsory schooling in order to learn new skills or to earn a higher grade diploma. These students share the facility with others who are participating in the YTS or TVEI projects, as well as with adults who may be enrolled in a special program.

Over half of the LEAs in Britain have a Community School, and some have quite a few within its boundaries. The Community School in Coventry, Nothdurft points out, is exceptional. Winning several national education and training awards, it is a model of community education. It offers programs such as: Adult Education, Open University, Women's Training Program, Sixth Form Courses for Adults, Job Training, Community Print Shop, Nursery/Daycare, Community Recreation Center, Youth Program, Gypsies Community Center Program, and a Health Clinic. Each week, approximately 6,000 adults participate in one or more programs at the Coventry Community School (Nothdurft).

Staffing

Physical Facilities

From his recent visit, Maeroff describes the surroundings of a typical British urban school as warm and comfortable. Many have cut flowers in the classrooms and gardens surrounding the building. Student work is displayed proudly on the walls and the classroom atmosphere is informal. Rarely are there feelings of hostility or tension; therefore, schools do not need to employ security personnel. Many believe this relative peacefulness of the school may be in jeopardy due to increasing levels of youth violence in Britain (Maeroff).

Cost

Current reforms have turned education into a virtual free-market for students. Because enrollments drive the allocation of resources by the government, a school's survival is dependent on its ability to attract a sufficient number of students. Many schools employ various public relations techniques in the quest to attract students. Moreover, it is not uncommon for schools to attempt to raise supplemental funding from private sources, some with the help of professional fundraisers (Maeroff).

Implications for School Design

Nothdurft points out some features of the British system which may be important to consider in the United States:

- Great Britain has recognized the need for performance-based assessment techniques which allow students to demonstrate acquired skills and knowledge more thoroughly.

- The implementation of a national, core curriculum may serve to increase standards and offer equal opportunity for all individuals.

- School should be considered an entitlement for all, rather than a privilege for a few.

- Community schools can offer a multitude of services for a diversity of individuals and groups.

- The school-industry linkage may serve to strengthen both the quality and relevance of education.

- The secondary school can best serve a community by being a multiple-use facility. By providing access to education, training, literacy, and health services, it empowers individuals of all ages, and thus the community as a whole.

Comparison of Important Themes in the Six Countries

The purpose of Table M.2 is to give a concise, across-the-board comparison of the most important points in each country section. Such information has been arranged according to the key words or key phrases that most accurately represent the main theme of each area of focus for each country. Due to space constraints, the data was selected according to what was considered most important in the literature. This was primarily determined by the recognition of recurring themes. Visually, the chart allows for uncomplicated country comparisons. Moreover, it clearly illuminates areas where information may be lacking for various reasons.

Insert Table M.2 about here

Analysis of Table M.2 Similarities

In terms of learner outcomes, the most common theme among the countries included in this paper is the need to satisfy the requirements of the work force. Although Japan, Sweden, and Great Britain do not state this need explicitly in their formal aims, its significance is quite apparent in the literature. The desire to shape socially responsible citizens is an equally important focus in the literature. Such aims often go hand-in-hand. There is a solid belief in many industrialized countries that in order to be a socially responsible citizen, an individual must be an active participant in the labor market.

The notion of the development of the whole personality of the individual is also shared among nations. Such concerns illustrate the desire for education to fulfill wider ranging goals, including the satisfaction of workforce needs. Education is expected to "...prepare the individual to become a creative and participating citizen" (Husen, p. 31).

Another common focus area is the provision of equality of opportunity to all citizens. Although this is a significant concern among most countries, it seems to be a difficult goal to achieve. Recent reforms in Great Britain have referred to the newly implemented national curriculum as an *entitlement*. Such language clearly indicates the desire to provide equal opportunity for all citizens.

With regard to the learning process, a nationally prescribed core curriculum is a feature of most of the countries included in this report. With the exception of Australia, all have a core curriculum that is designed and implemented at the national level. Recently adopted by the United Kingdom, a common curriculum is assumed to provide a more equitable education to individuals. For example, the new national curriculum is frequently referred to as an entitlement. While France has rigid curricular guidelines, Germany, Japan, and Sweden offer a variety of optional fields for students to pursue. Subjects that focus on skill development and work-force training are increasingly being incorporated into the curriculum. Moreover, in conjunction with such subjects a re-emphasis on basic skills (i.e. reading and mathematics) is the topic of much discussion. Thus, most countries feel the need to offer a common core of subjects in order to provide everyone with the same educational base, while allowing enough freedom to pursue personal interests as well. Clearly, a centralized core curriculum offers a coherent map of what should be learned by each individual who participates in the secondary school system of that country.

Various assessment techniques are employed in the countries examined. In both Australia and Germany assessment is undertaken at the state level. Local school assessment is found in France in contrast to its rigid, centrally controlled curriculum. Critics of the French system charge that such random assessment techniques lead to inequity in the secondary school system. Great Britain is currently attempting to implement performance-based assessment techniques, which allow for a more thorough evaluation of specific skills. Such assessment methods may be desirable, however the task is time consuming and still unrefined. Without proper training or financial rewards, teachers in Great Britain have been given the responsibility for implementing new methods for performance-based assessment. This had led to a great deal of frustration among teaching staff and could potentially hinder the reform process. Assessment in Japan is based on the degree of individual effort and participation, which could be considered an ongoing form of performance-based assessment.

Looking across the countries, it is impossible to find a dominant method or level (state, school, classroom) of assessment. However, there has recently been a call for the standardization of assessment techniques throughout the developed world and especially within the European community.

All the countries examined have various degrees of centralized management. Similar to the United States, Australia delegates a great amount of control to the individual states and territories. Great Britain has allowed local management of schools, but they must implement the new curriculum and follow national guidelines. Each secondary school, in conjunction with the community, has the option to be either public or grant maintained. Again, there is a delicate balance between central control and school/community decision making. Many countries seem to be striving for more of this balance. For example, France has relinquished some control to local communities with the implementation of Mission Locales, whereas Great Britain is attempting to do the opposite by centralizing school authority.

The transition from school-to-work is a common area of priority among the countries. What varies is the degree to which the school, industry, and the community share in the responsibility of preparing youth for the work place. Individuals are guided through this transition rather than being left to sink or swim. In the unique case of Sweden there is even a Youth Guarantee which charges local school authorities with the responsibility of those who may fall out of the system.

The staffing of schools is an issue which seems to be lacking in the literature. However, in two countries with highly regarded school systems, Japan and Germany, teachers are clearly given a great amount of respect by students as well as community members. Moreover, this respect is reflected in the relatively high salaries which they receive.

Again, for the future most countries are attempting to identify needed skills for a rapidly changing, global society. Such skills are needed in order to meet workforce needs, which will in turn benefit the economic competitiveness of the country.

Conclusion

As seen in the case studies, there is a common belief in the linkage between a country's educational system and its economic prosperity. National governments look to education as the key to economic competitiveness and national cohesion. Youth are considered an important human resource and thus critical to the work force of the future.

A recurrent theme when looking at the present focus of *learner outcomes* in other industrialized countries is the call for a closer relationship between secondary schooling and the world of work. Much of this discussion is based on human capital theory, which assumes that those who invest in education will be rewarded appropriately in the labor market. In other words, the skills, competencies, and attitudes learned in school are transferable to the work place. Implicit in this view is the linear relationship between education, individual skills, labor-force participation, and national economic productivity.

France, Germany, and Great Britain explicitly state that one of the aims of education is to produce a well qualified and productive work force. Japan goes even further, praising education as the key to national cohesion, economic development, and international status. Although Australia does not explicitly state the importance of the school-to-work linkage, many of the current reforms have directly focused on schooling as a means to improve national productivity and upgrade work-force skills.

Currently, most nations, studied within the context of this paper, have recognized the need for students to be taught appropriate skills for an increasingly interdependent, highly technological, rapidly changing world. Such conditions will require more versatile workers who are able to improve their skills throughout their professional lives. However, the language of skills is extremely generalized, and presents problems when trying to translate policy into practice.

When discussing skills there are two main areas of concern: (a) the acquisition of specialized technical skills, and (b) the need for an excellent foundation of general skills with which one can enter the work force. Although they are not mutually exclusive, the second of these two areas is most prevalent in the literature. With the rapid pace of technological innovation, individuals must be equipped with general skills in order to effectively respond to changes in technology. No longer can narrowly focused technical or vocational training answer the needs of the labor market.

As Husen notes, the classical industrial model of work organization has been a hierarchical one, where the employee performs a rigid set of work assignments under strict control and with minimal latitude for individual initiative. It is clear that this model is no longer viable in today's modern society with an increasingly well-educated work force.

Consequently, modifications in curricula must be designed to supply a future-oriented vocational education. The traditional objective of providing a narrow range of skills and knowledge must be expanded to fit a wider range of scenarios, both in and out of the work place. Husen contends that:

> The central capacity that an individual in modern society needs to possess is the ability to learn - and re-learn. The ability to acquire knowledge on one's own is essential in a society where the majority of employees are forced to take further courses in order to keep up and to enhance their qualifications. (p. 38)

Moreover, in the primarily service and information based economies, the ability to read and write and communicate with others is of critical importance. Equally important, with the advent of sophisticated technologies, is that schools encourage critical thinking skills as well as the ability to solve problems, both individually and as a group (Husen).

Based on current literature regarding the new work environment, Levin and Rumberger (1989) have suggested a new set of worker competencies. Such competencies may be helpful when attempting to identify the ill-defined general skills mentioned above. According to the authors, the following skills should be cultivated in the schools, because they are mandatory for the workforce of the future:

1. Initiative: the motivation and creative ability to think and act independently.

2. Cooperation: productive, goal-directed interaction with others.

3. Peer training: coaching, advising, and training of peers, both formally and informally.

4. Evaluation: assessment and appraisal of a certain product or service.

5. Communication: correct use of verbal, written, and physical communication as well as proper listening, reading comprehension, and interpretive skills.

6. Reasoning: use of both inductive and deductive approaches to the evaluation and formation of logical arguments.

7. Problem-solving: identification of problems, generation of alternative solutions and their ramifications, selection of solution and subsequent implementation.

8. Decision-making: application of problem-solving skills on a continuous basis.

9. Obtaining and using information: Selecting relevant information, knowing where and how to secure it, and utilizing it appropriately.

10. Planning: establishment of goals as well as the prioritizing of activities.

11. Learning skills: cognitive and flexible skills that assist in the acquisition of new knowledge as needed.

12. Multicultural skills: understanding of different languages, communication styles, and values in order to successfully interact with persons from other cultures.

In Australia, the need for the acquisition of such skills has been addressed through the implementation of the work-oriented programs in secondary schools. Rather than training students in narrow occupational areas, the programs stress the acquisition of skills such as individual and collaborative decision-making, accountability for decisions, exercising responsibility, goal setting, negotiation, cooperation, organization, problem solving, and critical analysis. Moreover, Australia's Technical and Further Education (TAFE) colleges, while providing specific vocational and apprenticeship programs, have increasingly emphasized the need for general transferable skills training through a broad based curriculum which includes the social sciences and humanities.

In Great Britain the need for general skills, with relevance to the world of work, has been addressed through the implementation of the Technical and Vocational Education Initiative (TVEI). The aims of TVEI are to increase the problem solving skills, initiative, enterprise, and creativity of fourteen to eighteen year-olds involved in the program. Furthermore, the improvement of self confidence, flexibility, independence, and fostering a positive attitude are all aims of the program.

In Japan, the focus on the development of general knowledge and skills has been based on the assumption that young people should be able to adapt to rapid changes in society, and have the ability to flexibly cope with swift advances in science and technology. Recently, the goals of education were updated to include the need for skills that will enable citizens to adapt to changing social realities and aid in the creative solution to difficulties. Interestingly, Japan has recognized a need for, and is now attempting to define, internationally transferable skills. This could be attributed to the fact that countries are becoming increasingly interdependent, both economically and culturally, as well as politically. A clear manifestation of this phenomenon can be seen in the European integration (Papadopoulos, 1991).

As Nothdurft emphasizes, the European Community (EC) has taken the challenge of generating a skilled and competitive workforce extremely seriously. This is particularly apparent in its commitment to youth employment and skill development. In addition to the efforts made by individual nations, the EC has implemented several EC-wide Action Programs. Such programs include: (a) a program that addresses the school-to-work transition and focuses on school-industry partnerships; (b) a program to upgrade the standards of vocational training and guarantee that it leads to recognized qualifications for the participants; and (c) a coinciding program that will upgrade the quality and relevance of compulsory education programs. While such nations continue to compete with one another, they are also working cooperatively, and investing substantial sums of money in order to elevate skill levels throughout the EC (Nothdurft).

Thus, as Nothdurft illustrates, workforce needs in Europe are being met through community-specific programs, universal nationwide programs, and Europe-wide programs. Although there are considerable cultural differences among the EC nations, they are united when confronting the urgent need to reform education and training programs in order to elevate the quality and competitiveness of their future workforce.

By examining the experiences of other nations, Nothdurft has outlined what he considers to be appropriate guiding principles that should inform policy in the United States. They include:

1. For the individual, work is a fundamental defining element in life for which there is no substitute. It contributes to the national economy and builds personal self-respect. Having recognized that public welfare systems are not viable alternatives, many European countries have invested tremendous sums of money to ensure that young school-leavers are capable of securing work, and upgrading their skills when needed.

2. Smooth school-to-work transitions are based on work-relevant education and work-related experience. In Sweden, such experience may begin as young as primary school and continue through secondary. In Europe as well as Australia, this transitionary period is at the focus of educational reforms.

3. Universally recognized and accepted skill credentials should be one goal of education. Nothdurft argues that much needed *portable skills* (p. 89) will be mandatory in the workforce of the future. Similarly, Japan has recognized the need for internationally transferable skills, which will be recognized beyond its own borders.

4. Partnerships and private-sector involvement, at both the policymaking and operational levels, are imperative in the quest to create a competent workforce. Group collaboration is a more successful way to forge solutions and create innovative programs.

5. Local innovation and development is critical to the success and sustainability of a program. The role of national government should be limited to the implementation of broad policies which have been generated cooperatively by government, labor, and industry.

6. Education and training beyond compulsory schooling is necessary to produce work-ready individuals. In most European countries, there are distinct routes to skills and economic opportunity for those students who leave compulsory school, yet do not enter the university. Such opportunity is exemplified by the German Dual system, the Swedish three-year post-compulsory upper secondary school, and the British Youth Training Scheme.

Implications for School Design in the United States

In addition to Nothdurft's recommendations, there are numerous suggestions, extracted from the descriptive review of the six countries, that may be applicable in the design of a comprehensive high school in the United States. The following suggestions may just offer food-for-thought or perhaps guide further research:

- It is imperative that youth are given a clearly defined route to either meaningful employment or further education. In most of the countries examined, individuals are informed about the various options available to them and subsequently guided through the system.

- Education must have relevance to the world beyond the classroom. Students want to know that their personal time and energy will be rewarded both intrinsically and extrinsically. Such views are echoed on a worldwide scale. If there is not a meaningful reward, individuals will not participate in education. Moreover, parents will refuse to offer support or financial investment if they do not see it as beneficial for the individual and family unit.

- The responsibility for the school-to-work transition should be shared by the national and state government, industry, schools, and the local community.

- By working in a collaborative manner, relevant programs and sustainable solutions can be successfully designed and implemented.

- Offering a variety of work-oriented programs, such as in Australia, may better accommodate a diverse population of students.

- Although much of the current literature focuses on skills, it is important not to forget the basics. In other words, technical and skill training should not be a replacement for studies in social and natural sciences, or fine arts and humanities. As in Japan, a holistic education for the student should be emphasized without the neglect of fine arts or physical education.

- Group participation and cooperative learning are important aspects of the Japanese school system that may be useful in the United States. The ability to communicate and work well with others is a necessary skill for the modern work place. Moreover, the ramifications of placing less emphasis on the individual and more on group cooperation may serve to encourage learning and strengthen bonds among students. Additionally, such a learning style may be more compatible with the cultural traditions of many minority groups within the United States.

- Effort and participation should be rewarded rather than ability. Tracking can be more harmful to the individual than helpful. Peer training could be utilized to bring slower students up to speed.

- The role of the teacher should go beyond the classroom. Developing a closer, more personal relationship with the student and the family may encourage learning and participation.

- Teachers should be sufficiently rewarded both financially and professionally. The role of the teacher is continuously expanding and becoming increasingly more demanding; therefore, some form of reward system should be implemented to discourage burn-out.

- The design of assessment techniques which are more performance-based would be beneficial in the evaluation of general skills needed in today's workforce. The student, or group of students, should be able to demonstrate skills such as problem-solving, cooperation, evaluation, reasoning, and decision-making.

- Members of the community and industry should be encouraged to utilize their expertise in the school. With the extra burdens being placed on teachers, such assistance should be welcomed. Such individuals can be a motivating force for students as both teachers and role models.

- The school can provide more than just an education. Other services could include job service, work experience programs, housing services, health services, and various types of counseling.

- In an increasingly multi-cultural society, the school should play a role in facilitating cross-cultural understanding.

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Appendix
Procedures and Sources Used in the Collection of Data

The methodology section of this paper will be relatively detailed in anticipation of subsequent research to be done on the subject. We will attempt to draw a map of the procedures and sources used in the gathering of data for this report.

The first step in undertaking a paper such as this is defining a purpose statement and designing a relevant outline. The focus question of the paper is: What can we learn from the designs of high schools in other countries in order to inform future designs of comprehensive high schools in the United States?

Once the purpose of the paper was defined, the selection of the countries and appropriate criteria for investigation was determined. As stated above, a range of industrialized countries were selected which illustrated a diverse cross-section of school systems. The countries selected include Australia, the Federal Republic of Germany, France, Japan, Sweden, and the United Kingdom.

The focus of investigation within the secondary school system of each country includes learner outcomes; learning process (curriculum, instruction, assessment); organization; partnerships with the community; staffing; physical facilities; and cost.

The object was to gather as much information as possible about each area of focus, within each country, in order to adequately respond to the guiding question. However, it became apparent during the research process that some areas would be neglected, due to an insufficient amount of available information and time limitations of the project.

After defining the guiding question, the countries, and the areas of focus, it was necessary to select key words and terms which would correspond to the subject indexes of the preliminary sources used for this paper. The most helpful key words, used in conjunction with a specific country name, included:

access
assessment
curriculum
educational reform
high school
instruction

educational change
educational innovation
secondary school
standards

To aid in the identification of key words or terms, the Educational Resources Information Center (ERIC) has published the *Thesaurus of ERIC Descriptors*, which is available in the reference section of most educational libraries.

In order to locate the primary sources of relevant educational research, including articles and other documents, preliminary sources such as *Resources in Education* (RIE), *Education Index* and *Current Index to Journals in Education* (CIJE) were used. Organized by subject, such preliminary sources give the author, title, and place of publication of various articles in education.

Resources in Education reviews `report literature,' including speeches, reports, and documents related to education, which are not available in journals. Although much of the information was compelling, it was often difficult to obtain, especially documents relating to other countries.

The most helpful preliminary source was *Current Index to Journals in Education*, which is published monthly as part of the Educational Resources Information Center (ERIC) system. It gives a thorough coverage of educational periodicals and journals, and includes many foreign publications. Although it is not as detailed as RIE, it provides abstracts of articles from over 780 national and international publications.

Education Index is a monthly index which covers periodicals, yearbooks, and monographs in education. Although articles from over 300 periodicals are indexed, it only includes bibliographic data. For this reason, CIJE was much more helpful.

In addition to the manual indexes listed above, the *ERIC database* for computerized searching of the literature was extremely useful. The key benefits of conducting a computer search for this project included: the relative speed with which resources were identified; the provision of a printout which contained either descriptors and bibliographic information, or the complete citation; and the ability to conduct simultaneous searching of descriptors.

Through the use of preliminary sources, primary and secondary sources of information were identified. The most useful primary sources, usually journals, in the field of comparative education include: *Comparative Education, Comparative Education Review, International Education Journal, International Review of Education, Prospects, Journal of Curriculum Studies, Phi Delta Kappan*, and the *International Yearbook of Education.*

The books, or secondary sources, that were used were identified through the Libraries of the University of Minnesota Integrated Network Access (LUMINA) system. LUMINA is an automated system which enhances and extends access to the University Libraries collections. It includes a public access, on-line catalog that provides access to over two million records by author, title, subject, and keyword. The keywords listed above were also used with the LUMINA system.

In addition to the sources mentioned above, information regarding the secondary school system in each country investigated was requested (via telephone) of each country's embassy in New York. With little delay, a significant amount of valuable material was sent by the embassies.

Although all of the above steps were taken, at times it was useful to browse through the most recent education journals in search of valuable material. Although time consuming, this process can lead to the discovery of information which may have been hidden by the limiting use of key words.

The abundance of information available on certain aspects of secondary education in the world is overwhelming. Learner outcomes, curriculum, assessment, and organization are all well represented in the literature. The areas which were more difficult to uncover include staffing, cost, and physical facilities. Consequently, there are many gaps in this paper which may need further investigation in the future. There is no doubt that an entire paper could be written on each area of focus included in this report, and perhaps a more detailed inquiry on specific areas (i.e. curriculum, performance-based assessment) would be an advisable next step.

Table M.1
Descriptive Information About the Six Countries

	Australia	Germany	France	Japan	Sweden	Great Britain
Population (1985)	15.5 million	61.39 million	55.09 million	120.62 million	8.34 million	56.02 million
Language of Instruction	English	German	French	Japanese	Swedish	English
Literacy Rate	98.5%	99%	99%	99%	99%	99%
Academic Year	January - December	August - July	September - June	April - March	August - June	October - July
School Days Per Year		210		240		
Duration of Schooling	7+3+2	7+3+3	5+4+3	6+3+3	6+3+3	4+4+4
Compulsory Schooling	10 years (ages 6-16)	9 years (ages 6-15)	10 years (ages 6-16)	9 years (ages 7-16)	9 years (ages7-16)	11 years (ages 5-16)
Teacher: Student Ratio			25:1			15:1

Table M.2
Main Themes of Secondary Education Reform in Six Countries

FOCUS	COUNTRY Australia	Germany	France	Japan	Sweden	Great Britain
Learner Outcomes	• Development of potential in individual • Satisfaction of workforce needs	• Socially responsibleresponsible citizens • Equality of opportunity • Well trained, productive work force • Independence	• Equality of opportunity • Satisfaction of workforce needs • Full development of personality	• Full development of personality • Responsibility • Respect • Flexibility	• Socially responsible citizens • Balanced individuals • Skill development for entering work force	• Quality skills and knowledge • Adaptability • Reasoning abilities
Learning Process (Curriculum, Instruction, Assessment)	• New emphasis: basic skills; continuity of curriculum; expansion of subjects • State assessment	• Three core fields, plus options • State assessment • Numerical grading (1-5) • Written reports, conferences	• National curriculum • Assessment by commissions • Differing assessment among schools	• National curriculum & texts (some flexibility) • Juku • Credit system • Reward for effort & participation	• Centrally framed core curriculum • 30+ lines of study • Numerical grading (1-5) • No exams/ parent conference	• New national curriculum = entitlement • 9 foundation subjects + religion and foreign language • Performance-based assessment
Organization	• Coeducational/ comprehensive • Decentralized	• Dual system • Vocational and Academic • Rigorous selection to academic secondary	• Comprehensive • Highly centralized	• Centralized • Competitive exam for secondary school • Unofficial ranking of schools	• Centralized • Secondary school application	• Centralized curriculum • Local management • Public or grant maintained • Emphasis on school choice
Partnerships with Community	• Work-oriented programs: achievement, experience and inquiry	• Strength of system = smooth transition from school to work • Government and industry cooperation • Apprenticeship	• Short or Long technical education programs • Technical education = last resort • Mission Locales		• Youth Guarantee: ensures job or school for 16-18 year-olds • Work experience is focal point in upper secondary	• Youth Training Scheme = training + work experience = vocational qualifications • Tech. & voc. ed. initiative = industry + community

Table 2 continued

FOCUS	Australia	Germany	France	Japan	Sweden	Great Britain
Staffing	• Members of community and industry employed in work-oriented programs	• Well respected • High salary • Tenure	• National recruitment • Competitive exam	• Well respected • Moral guide • Powerful union • High salary		
Physical Facilities				• Simple, functional		• Peaceful, comfortable, no security needs
Cost		• Shared by industry, labor, and schools	• Minimal cost, financial aid available	• Free compulsory schooling • Fee for upper secondary school	• Sizeable investment by central government	• Free market competition for enrollments • Professional fund raisers employed
Future Focus	• Transition to work — linkages	• Environmental awareness education • Women in science and industry	• Training for work • Educational linkages to work	• Lifelong learning • Individuality • Flexibility • Global view		• Refining assessment techniques for performance-based assessment